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Preface

INDIA, a Reference Annual is compiled and edited by the Research and Reference Division of the Ministry of Information and Broadcasting This is the thirty fourth issue of the Annual, which contains information on diverse aspects of India—its geographic and demographic features, polity, economy, social institutions, culture, plans and programmes and achievements Due to certain unavoidable exigencies, the earlier issue of the Annual got delayed, hence to make up the time lost, the present issue has been combined for two years, 1988 and 1989

This Annual is an established work of reference, particularly useful to scholars, students, officials, journalists, academicians, professionals and others Each chapter has been revised and, within the limits of time and space, every effort has been made to provide latest information However, in the nature of things, a publication of this kind which takes considerable time from the collection of material to final printing, cannot be completely up-to-date and fully comprehensive Broadly, the text in this edition covers information up to December 1988, but facts and figures have been updated wherever found feasible The chapter 'Diary of National Events' covers important happenings during 1987 and 1988 from January to December

Information in the Annual has been compiled from official and other authentic sources with the cooperation of the Central ministries/departments/state governments/union territory administrations and other government agencies

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1 crore = 10 million
100 crore = 1 billion

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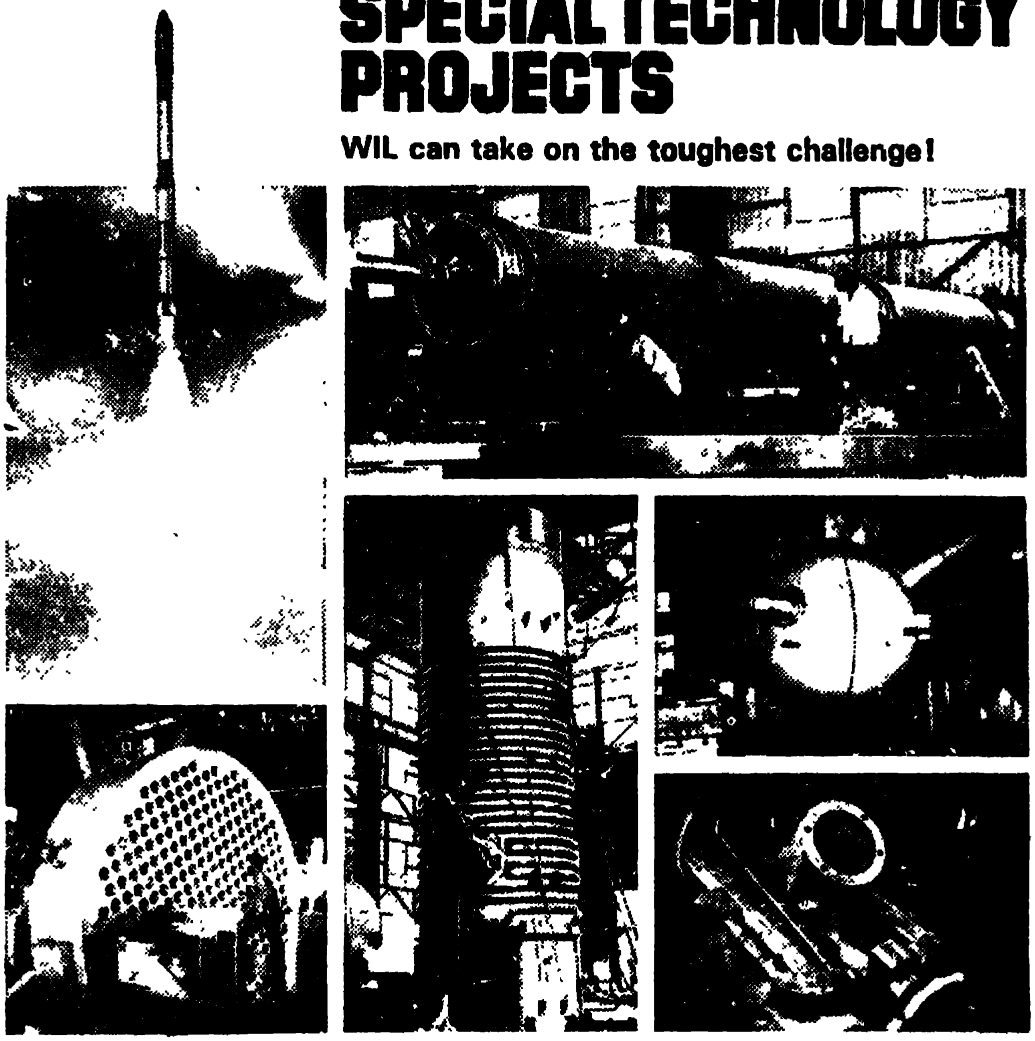

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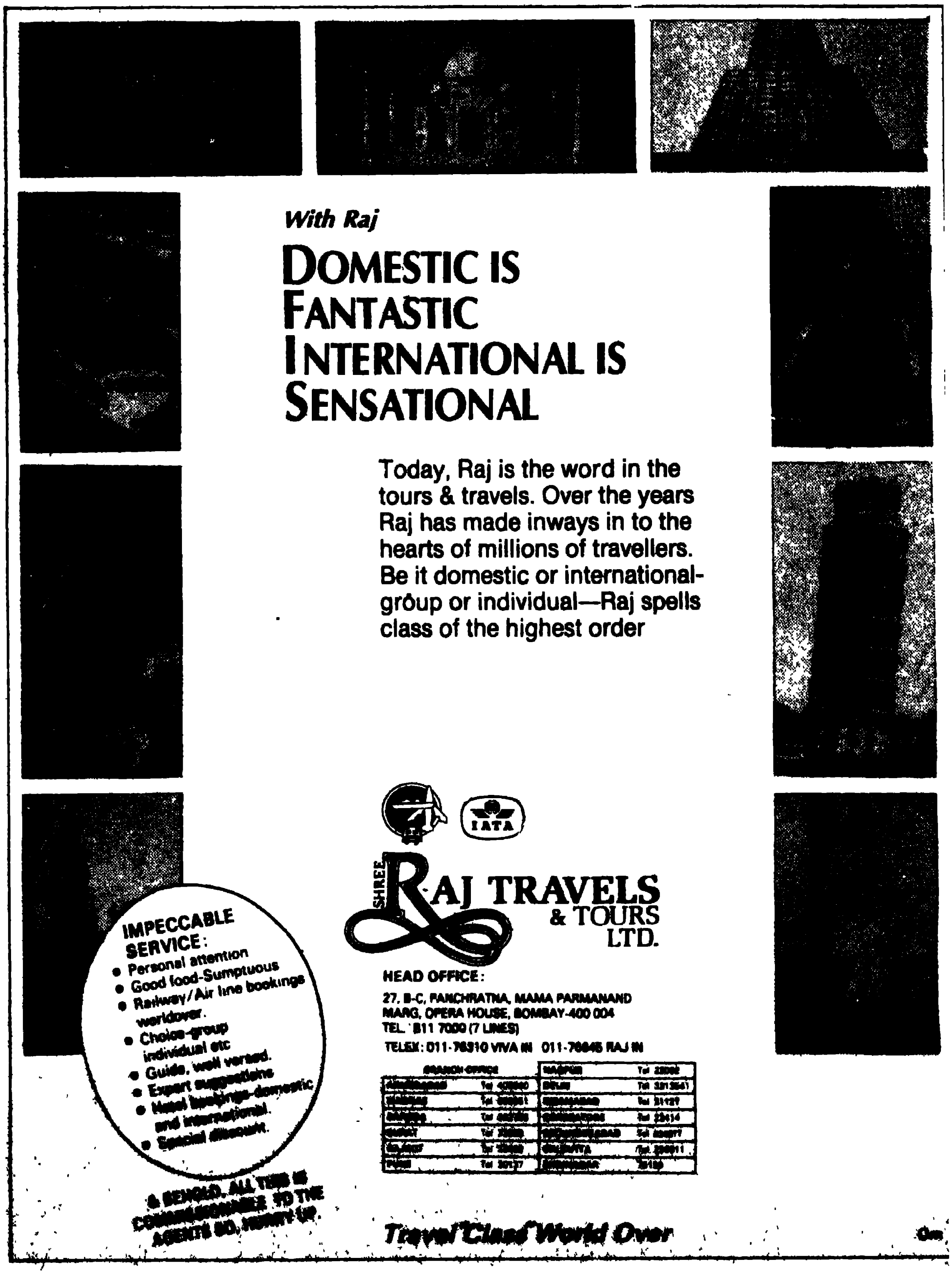

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1 Land and the People

INDIA is one of the oldest civilisations with kaleidoscopic variety and rich cultural heritage. It has achieved multi-faceted socio-economic progress during the last 42 years of its independence. India has become self-sufficient in agricultural production and is now the tenth industrialised country in the world and the sixth nation to have gone into outer space to conquer nature for the benefit of the people. It covers an area of 32,87,263[1] sq. km, extending from the snow-covered Himalayan heights to tropical rain forests of the south. As the seventh largest country in the world, India is well-marked off from the rest of Asia by mountains and the sea, which give the country a distinct geographical entity. Bounded by the great Himalayas in the north it stretches southwards and, at the Tropic of Cancer, tapers off into the Indian Ocean between the Bay of Bengal on the east and the Arabian Sea on the west.

Lying entirely in the northern hemisphere, the mainland extends between latitudes 8° 4′ and 37° 6′ north longitudes 68° 7′ and 97° 25′ east and measures about 3,214 km from the north to south between the extreme latitudes and about 2,933 km from the east to west between the extreme longitudes. It has a land frontier of about 15,200 km. The total length of the coastline of the mainland, Lakshadweep Islands and Andaman and Nicobar Islands is 7,516.6 km.

PHYSICAL BACKGROUND

The countries having a common border with India are Afghanistan and Pakistan to the north-west, China, Bhutan and Nepal to the north, Burma to the east and Bangladesh to the east of West Bengal. Sri Lanka is separated from India by a narrow channel of sea formed by the Palk Strait and the Gulf of Mannar.

PHYSICAL FEATURES

The mainland comprises four well-defined regions, namely, the great mountain zone, plains of the Ganga and the Indus, the desert region and the Southern Peninsula.

The Himalayas comprise three almost parallel ranges interspersed with large plateaus and valleys, some of which, like Kashmir and Kulu valleys, are fertile, extensive and of great scenic beauty. Some of the highest peaks in the world are found in these ranges. The high altitudes limit travel only to a few passes, notably the Jelep La and Nathu La on the main Indo-Tibet trade route through the Chumbi Valley, north-east of Darjiling and Shipki La in the Satlej Valley north-east of Kalpa (Kinnaur). The mountain wall extends over a distance of about 2,400 km with a varying depth of 240 to 320 km. In the east, between India and Burma and India and Bangladesh, the hill ranges are much lower. The

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Provisional as on 31 March 1982

Garo, Khasi, Jaintia and Naga Hills, running almost east-west, join the chain of Mizo and Rakhine Hills running north-south.

The plains of the Ganga and the Indus, about 2,400 km long and 240 to 320 km broad, are formed by the basins of three distinct river systems—the Indus, the Ganga and the Brahmaputra. They are one of the world's greatest stretches of flat alluvium and also one of the most densely populated areas on the earth. Between the Yamuna at Delhi and the Bay of Bengal, nearly 1,600 km away, there is a drop of only 200 metres in elevation.

The desert region can be divided into two parts—the great desert and the little desert. The great desert extends from the edge of the Rann of Kachchh beyond the Luni river northward. The whole of Rajasthan-Sind frontier runs through this. The little desert extends from the Luni between Jaisalmer and Jodhpur up to the northern wastes. Between the great and the little desert lies a zone of absolutely sterile country, consisting of rocky land cut up by limestone ridges.

The Peninsular plateau is marked off from the plains of the Ganga and the Indus by a mass of mountain and hill ranges varying from 460 to 1,220 metres in height. Prominent among these are the Aravalli, Vindhya, Satpura, Maikala and Ajanta. The Peninsula is flanked on one side by the Eastern Ghats, where the average elevation is about 610 metres and on the other by the Western Ghats, where it is generally from 915 to 1,220 metres, rising in places to over 2,440 metres. Between the Western Ghats and the Arabian Sea lies a narrow coastal strip, while between the Eastern Ghats and the Bay of Bengal there is a broader coastal area. The southern point of the plateau is formed by the Nilgiri Hills where the Eastern and the Western Ghats meet. The Cardamom Hills laying beyond may be regarded as a continuation of the Western Ghats.

GEOLOGICAL STRUCTURE

The geological regions broadly follow the physical features and may be grouped into three well-defined regions: the Himalayas and their associated group of mountains, the Indo-Ganga plain and the Peninsular Shield.

The Himalayan mountain belt to the north and the Naga-Lushai mountain in the east are the regions of mountain building movement. Most of this area, now presenting some of the most magnificent mountain scenery in the world, was under marine conditions about 60 crore years ago. In a series of mountain building movements commencing about seven crore years ago, the sediments and the basement rocks rose to great heights. The weathering and erosive agencies worked on these to produce the relief seen today. The Indo-Ganga plains are a great alluvial tract that separates the Himalayas in the north from the Peninsula to the south.

The Peninsula is a region of relative stability and rare seismic disturbances. Highly metamorphosed rocks of the earliest periods, dating back as far as 380 crore years occur in the area; the rest being covered by the coal-bearing Gondwana formations, lava flows belonging to the Deccan Trap formation and younger sediments.

RIVERS

The rivers in India may be classified as: (i) the Himalayan rivers, (ii) the Peninsular rivers, (iii) the coastal rivers, and (iv) the rivers of the inland drainage basin.

The Himalayan rivers are generally snow-fed and have reasonable flow throughout the year and as such are perennial. During the monsoon months, the Himalayas receive very heavy rainfall and the rivers discharge the maximum quantity of water causing frequent floods. The Peninsular rivers are generally rain-fed and, therefore, fluctuate in volume. A large number of the streams are non-perennial. The coastal streams, especially on the west coast, are short in length and have limited catchment areas. Most of them are flashy and non-perennial. The streams of the inland drainage basin of western Rajasthan are few and far between. Most of them are of an ephemeral character. They drain towards the individual basins or salt lakes like the Sambhar or are lost in the sands, having no outlet to the sea. The Luni is the only river of this category that drains into the Rann of Kachchh.

The Ganga sub-basin which is a part of the larger Ganga-Brahmaputra-Meghana basin is the largest in India receiving waters from an area which comprises about one-quarter of the total area of the country. Its boundaries are well-defined by the Himalayas in the north and the Vindhyas in the south. The Ganga flows through Uttar Pradesh, Bihar and West Bengal in India and enters Bangladesh thereafter. It has two main headwaters in the Himalayas: the Bhagirathi and the Alakananda, the former rising from the Gangotri glacier at Gomukh and the latter from a glacier short of the Alkapuri glacier. The Ganga is joined by a number of the Himalayan rivers, including the Yamuna, Ghaghra, Gomti, Gandak and Kosi. The western-most river of the Ganga system is the Yamuna, which rises from the Yamnotri glacier and joins the Ganga at Allahabad. Among the important rivers flowing north from the central India into the Yamuna/Ganga are the Chambal, Betwa and Sone.

The Brahmaputra and the Barak flowing from east to west in the north-eastern region are international rivers and have immense water resources potential which is still in the initial stages of development.

The Godavari in the southern Peninsula has the second largest river basin in the country covering 10 per cent of the area of India. The Krishna basin is the second largest in Peninsular India. The Mahanadi has the third largest basin in the Peninsula. The basins of the Narmada in the uplands of the Deccan flowing to the Arabian Sea and of the Cauvery in the south discharging into the Bay of Bengal are of about the same size, though of different character and shape.

Two other river systems, which are small but agriculturally important, are those of the Tapti in the north and Penner in the south. These west coast rivers are of great importance as they contain as much as 14 per cent of the country's water resources while draining only 12 per cent of the land area.

CLIMATE

The climate of India may be broadly described as tropical monsoon type. There are four seasons in India: (i) winter season (January-February), (ii) hot weather season, summer (March-May), (iii) rainy season, south-western monsoon period (June-September), and (iv) post-monsoon period, known also as north-east monsoon period in the southern Peninsula (October-December). India's climate is affected by two seasonal winds—the north-east monsoon and the south-west monsoon. The north-east monsoon commonly known as winter monsoon blows from land to sea whereas south-west monsoon known as summer monsoon blows from sea to land after crossing the Indian ocean, the Arabian sea and the Bay of Bengal. The south-west monsoon brings most of the rainfall during the year in the country.

FLORA

With its wide range of climatic conditions from the torrid to the arctic, India has a rich and varied vegetation, which few other countries of comparable size possess. India can be divided into eight distinct floristic regions, namely the western Himalayas, the eastern Himalayas, Assam, the Indus plain, the Ganga plain, Deccan, Malabar and the Andamans.

The western Himalayan region extends from Kashmir to Kumaon. The temperate zone of the region is rich in forests of chir, pine, other conifers and broad-leaved temperate trees. Higher up, forests of deodar, blue pine spruce and silver fir occur. The alpine zone extends from the upper limit of the temperate zone to about 4,750 metres or even higher. The characteristic trees of this zone are the high level silver fir, silver birch and junipers. The eastern Himalayan region extends from Sikkim eastwards and embraces Darjiling, Kurseong and the adjacent tract. The temperate zone of the region has forests of oaks, laurels, maples, rhododendrons, alder and birch; many conifers, junipers and dwarf willows also occur. The Assam region comprises the Brahmaputra and the Surma valleys and the intervening hill ranges. The vegetation is luxuriant with evergreen forests, occasional thick clumps of bamboos and tall grasses. The Indus plain region comprises the plains of Punjab, western Rajasthan and northern Gujarat. The region is dry and hot and supports scanty natural vegetation. The Ganga plain region covers the area from the Aravalli ranges to Bengal and Orissa. A greater part of the area is alluvial plain and is under cultivation for wheat, sugarcane and rice. Only small areas support forests of widely differing types. The Deccan region comprises the entire tableland of the Indian Peninsula and supports vegetation of various kinds from scrub jungles to mixed deciduous forests. The Malabar region covers the excessively humid belt of mountain country running parallel to the west coast of the Peninsula. This region, besides being rich in forest vegetation, produces important commercial crops, such as coconut, betelnut, pepper, coffee and tea. Rubber, cashewnut and eucalyptus trees have also been successfully introduced in some parts of this region. The Andaman region abounds in evergreen, semi-evergreen, mangrove, beach and diluvial forests. The Himalayan region from Kashmir to Arunachal Pradesh through Nepal, Sikkim, Bhutan, Meghalaya and Nagaland and the Deccan Peninsula are rich in endemic flora, that is, a large number of plants which are not found elsewhere.

India is floristically very rich. It is estimated that there are about 45,000 species of plants including shrubs in the country. The vascular flora, which forms the conspicuous vegetation cover itself, comprises 15,000 species of which more than 35 per cent are endemic and have so far not been reported anywhere in the world. The total plant wealth of the country includes not only the usual large flowered plants including flowering shrubs, but a large number of non-flowering plants like ferns, liverworts, algae and fungi.

The flora of the country is being studied by the Botanical Survey of India (BSI), Calcutta and some other institutions. The publication *Flora of India* in the form of fascicles has been initiated by the BSI and 18 fascicles have already been published. These have been compiled into a volume, *Flora of India* (vol. I). The BSI has already brought out publications on the flora in Karnataka (2 vols.), Goa, Daman and Diu (2 vols.), Tamil Nadu (2 vols.), Arunachal Pradesh (3 vols.), Meghalaya (2 vols.) and Tripura (1 vol.). Publications on state and district flowering and non-flowering flora have also been brought out by the BSI.

Ethnobotanical study deals with the utilisation of plants and plant products by ethnic races. A scientific study of these plants has been made by the BSI. A number of detailed ethnobotanical explorations were conducted in different tribal areas of the country. More than 800 plant species of ethnobotanical interest were collected and identified in different centres.

Owing to the destruction of forests for agricultural, industrial and urban development, several Indian plants are facing extinction. Samples of some of these plants are preserved in botanical gardens and national parks. Collections of dried samples of these plants are preserved in the Central National Herbarium, the regional herbaria of the BSI and in research and teaching institutions of the country.

FAUNA

Possessing a tremendous diversity of climate and physical conditions, India has a great variety of fauna, numbering about 75,000 known species. Of these 2,500 are fishes, 150 amphibians, 450 reptiles, 2,000 birds, 850 mammals, and the remaining—the invertebrates, including protozoa, porifera, worms, insects, molluses and crustaceans. Of these, 81 species of mammals, 47 of birds, 15 of reptiles, three of amphibians and a large number of butterflies, moths and beetles are listed as endangered.

The mammals include elephant, associated in India from time immemorial with mythology and the splendour of her regal pageantry, *gaur* or Indian bison, Indian buffalo, *nilgai, choushingha* or four-horned antelope (unique to India), black buck or Indian antelope, *ghor-khur* or Indian wild ass (restricted to the Rann of Kachchh) and great one-horned rhinoceros (now confined to eastern India). There are also several species of deer, *viz.*, the rare Kashmir stag, swamp deer, spotted deer, musk deer, *thamin* or brow-antlered deer (found in Manipur) and mouse deer.

Among the animals of prey, Indian lion is remarkable being the only species found outside Africa. Among other cats are the leopard, clouded-leopard, snow leopard and various species of smaller size.

Several species of monkeys and *langurs* are common. The only ape found in India, the hoolock, is confined to the rain forests of the eastern region. The lion-tailed nacaque with a halo hair around the face is found in the south.

The bird life is very rich and colourful. Several birds like pheasants, geese, ducks, *mynahs,* parakeets, pigeons, cranes, hornbills and sunbirds inhabit forests and wet lands.

Rivers and lakes harbour crocodiles and *gharials,* the latter being the only representative of crocodilian order in the world. The salt water crocodile is found along the eastern coast and in the Andaman and Nicobar Islands. A project for breeding crocodiles, started in 1974, has been instrumental in saving the crocodile from extinction. Twelve schemes are in operation in different states for breeding of crocodiles and releasing them in the wild.

The great Himalayan range has a very interesting fauna and includes wild sheep and goats, markhor, ibex, shrew and tapir. The lesser panda and the snow-leopard are also found in the upper reaches of the mountains. The fauna of India is studied by Zoological Survey of India, which publishes the *Fauna of India.* So far, 115 volumes have been published, covering 23,000 species.

The Wild Life (Protection) Act, 1972, adopted by all states except Jammu and Kashmir (which has its own Act), governs the wild life conservation and protection of endangered species both inside and outside forest areas. Under this Act, trade in rare and endangered species has been banned. India is a signatory to the Convention on International Trade in Endangered Species of Wild Flora and Fauna. Under this, export or import of endangered species is subject to strict control and commercial exploitation of such species is prohibited.

There are presently 67 national parks, 394 wild life sanctuaries and 35 zoological gardens in the country, covering four per cent of the geographical area of the country. The states are given financial aid for improvement and development of national parks and sanctuaries.

DEMOGRAPHIC BACKGROUND

CENSUS

The first all-India census was completed in 1872. Since 1881, the census in India has been taken regularly every ten years. The latest, in 1981 marked the completion of 110 years of decennial census taking in the country. The enumeration was conducted between 9 February 1981 and 5 March 1981 (with reference point as the sunrise of 1 March 1981) throughout the country except Jammu and Kashmir and Assam. Due to unfavourable weather conditions in February-March 1981, the census in Jammu and Kashmir was conducted from 20 April to 10 May 1981 (with reference point being the sunrise of 6 May 1981). The census could not be taken in Assam due to disturbed conditions prevailing there at that time.

POPULATION

According to the 1981 census, the total population of India (including the projected population of Assam) was 68,51,84,692. As compared to the 1971 census, it showed an increase of 25 per cent. The main cause of this increase in population is the fall in the death rate brought about by better health conditions, effective control of epidemics, efficient handling of famine conditions and general improvement and economic development. The population has gone up despite a fall in the birth rate. The proportion of rural population to total population was 76.69 per cent and that of urban population as 23.31 per cent. The proportion of main workers, who had worked for the major part of the year, to total population was 33.45 per cent. The male workers account for 51.62 per cent while female work participation was 13.99 per cent of the total population. Table 1.1 shows population growth since 1911.

DENSITY

The average density of population per sq km in 1981 was 216. It varied considerably from state to state, being as high as 655 in Kerala and as low as 45 in Sikkim and 8 in Arunachal Pradesh. The area and density of population in states and union territories are shown in table 1.2.

The density of population and percentage increase in population between 1921 and 1981 are shown in table 1.3.

SEX RATIO

In 1981, there were 35.4 crore males and 33.1 crore females. Thus for every 1,000 males, India has 933 females; the number declining from 972 in 1901 to 950 in 1931. Only Kerala has more women than men *i.e.,* 1,032 per thousand men. The lowest female ratio among the states is in Sikkim *i.e.,* 835 per thousand men. The lowest female ratio among the union territories is in the Andaman and Nicobar Islands, where it is 760 per thousand men.

LITERACY

For the purpose of the census, a person is deemed as literate if he or she can read and write with understanding in any language. A person who can merely read, but cannot write is not defined as literate. Children below five years are treated as illiterate.

TABLE 1.1 GROWTH OF POPULATION (1911-1981)

State/Union Territory		1911	1921	1931	1941	1951	1961	1971	1981
INDIA	. .	25,20,93,390	25,13,21,213	27,89,77,238	31,86,60,580	36,10,88,090	43,92,34,771	54,81,59,652	68,51,84,692
States	. .								
1. Andhra Pradesh	. .	2,14,47,412	2,14,20,448	2,42,03,573	2,72,89,340	3,11,15,259	3,59,83,447	4,35,02,708	5,35,49,673
2. Assam[1]	. .	38,48,617	46,36,980	55,60,371	66,94,790	80,28,856	1,08,37,329	1,46,25,152	1,98,96,843
3. Bihar	. .	2,83,14,281	2,81,26,675	3,13,47,108	3,51,70,840	3,87,82,271	4,64,47,457	5,63,53,369	6,99,14,734
4. Gujarat	. .	98,03,587	1,01,74,989	1,14,89,828	1,37,01,551	1,62,62,657	2,06,33,350	2,66,97,475	3,40,85,799
5. Haryana	. .	41,74,690	42,55,905	45,59,931	52,72,845	56,73,614	75,90,543	1,00,36,808	1,29,22,618
6. Himachal Pradesh	. .	18,96,944	19,28,206	20,29,113	22,63,245	23,85,981	28,12,463	34,60,434	42,80,818
7. Jammu and Kashmir[2]	. .	22,92,535	24,24,359	26,70,208	29,46,728	32,53,852	35,60,976	46,16,632	59,87,389
8. Karnataka	. .	1,35,25,251	1,33,77,599	1,46,32,992	1,62,55,368	1,94,01,956	2,35,86,772	2,92,99,104	3,71,35,714
9. Kerala	. .	71,47,673	78,02,127	95,07,050	1,10,31,541	1,35,49,118	1,69,03,715	2,13,47,375	2,54,53,680
10. Madhya Pradesh	. .	1,94,40,965	1,91,71,750	2,13,55,657	2,39,90,608	2,60,71,637	3,23,72.408	4,16,54,119	5,21,78,844
11. Maharashtra	. .	2,14,74,523	2,08,49,666	2,39,59,300	2,68,32,758	3,20,02,564	3,95,53,718	5,04,12,235	6,27,84,171
12. Manipur	. .	3,46,222	3,84,016	4,45,606	5,12,069	5,77,635	7,80,037	10,72,753	14,20,953
13. Meghalaya	. .	3,94,005	4,22,403	4,80,837	5,55,820	6,05,674	7,69,380	10,11,699	13,35,819
14. Nagaland	. .	1,49,038	1,58,801	1,78,844	1,89,641	2,12,975	3,69,200	5,16,449	7,74,930
15. Orissa	. .	1,13,78,875	1,11,58,586	1,24,91,056	1,37,67,988	1,46,45,946	1,75,48,846	2,19,44,615	2,63,70,271
16. Punjab	. .	67,31,510	71,52,811	80,12,325	96,00,236	91,60,500	1,11,35,069	1,35,51,060	1,67,88,915
17. Rajasthan	. .	1,09,83,509	1,02,92,648	1,17,47,974	1,38,63,859	1,59,70,774	2,01,55,602	2,57,65,806	3,42,61,862
18. Sikkim	. .	87,920	81,721	1,09,808	1,21,520	1,37,725	1,62,189	2,09,843	3,16,385
19. Tamil Nadu	. .	2,09,02,616	2,16,28,518	2,34,72,099	2,62,67,507	3,01,19,047	3,36,86,953	4,11,99,168	4,84,08,077
20. Tripura	. .	2,29,613	3,04,437	3,82,450	5,13,010	6,39,029	11,42,005	15,56,342	20,53,058
21. Uttar Pradesh	. .	4,81,54,908	4,66,72,398	4,97,79,538	5,65,35,154	6,32,19,655	7,37,54,554	8,83,41,144	11,08,62,013
22. West Bengal	. .	1,79,98,769	1,74,74,348	1,88,97,036	2,32,29,552	2,62,99,980	3,49,26,279	4,43,12,011	5,45,80,647
Union Territories									
1. Andaman and Nicobar Islands	. .	26,459	27,086	29,463	33,768	30,971	63,548	1,15,133	1,88,741
2. Arunachal Pradesh[3+5]	. .	—	—	—	—	—	3,36,558	4,67,511	6,31,839

3. Chandigarh	18,437	18,133	19,783	22,574	24,261	1,19,881	2,57,251	4,51,610
4. Dadra and Nagar Haveli[4]	29,020	31,048	38,260	40,441	41,532	57,963	74,170	1,03,676
5. Delhi	4,13,851	4,88,452	6,36,246	9,17,939	17,44,072	26,58,612	40,65,698	62,20,406
6. Goa[5], Daman and Diu[4]	5,19,222	5,00,904	5,41,710	5,83,736	5.96,059	6,26,667	8,57,771	10,86,730
7. Lakshadweep	14,555	13,637	16,040	18,355	21,035	24,108	31,810	40,249
8. Mizoram[5]	91,204	98,406	1,24,404	1,52,786	1,96,202	2,66,063	3,32,390	4,93,757
9. Pondicherry[4]	2,57,179	2,44,156	2,58,628	2,85,011	3,17,253	3,69,079	4,71,707	6,04,471

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1. The 1981 population of Assam is based on projections.
2. The population of Jammu and Kashmir for 1951 has been taken to be the arithmetic mean of 1941 and 1961 population. The population of the state for 1941 and earlier census has been adjusted to exclude those areas currently under the illegal occupation of Pakistan and China. Later figures exclude the population of such areas.
3. Censused for the first time in 1961.
4. Population figures for Dadra and Nagar Haveli and Goa, Daman and Diu, for 1911, 1941 and 1951 have been assumed to be the same as in 1910, 1940 and 1950 respectively. Similarly, figure for Pondicherry for 1951 has been assumed to be the same as in 1948. The 1961 figures for Goa, Daman and Diu relate to the census taken by the Portuguese authorities with reference date as 15 December 1960; figures for Dadra and Nagar Haveli relate to 1961 census with reference date as 1 March 1962.
5. Arunachal Pradesh and Mizoram attained statehood on 20 February 1987 and Goa attained statehood on 30 May 1987.

TABLE 1.2 AREA AND DENSITY OF POPULATION

	Area in sq km (000)	Population	Density of population per sq km
ALL INDIA[1]	3,287.3[2]	68,51,84,692	216[3]
States			
1. Andhra Pradesh	275.1[5]	5,35,49,673	195
2. Arunachal Pradesh	83.7[5]	6,31,839	8
3. Assam[4]	78.4	1,98,96,843	254
4. Bihar	173.9[5]	6,99,14,734	402
5. Goa	3.7	10,07,749	272
6. Gujarat	196.0[5]	3,40,85,799	174
7. Haryana	44.2[5]	1,29,22,618	292
8. Himachal Pradesh	55.7	42,80,818	77
9. Jammu and Kashmir[1]	222.2[5]	59,87,389	59[3]
10. Karnataka	191.8	3,71,35,714	194
11. Kerala	38.9[5]	2,54,53,680	655
12. Madhya Pradesh	443.4[5]	5,21,78,844	118
13. Maharashtra	307.7[5]	6,27,84,171	204
14. Manipur	22.3	14,20,953	64
15. Meghalaya	22.4[5]	13,35,819	60
16. Mizoram	21.1	4,93,757	23
17. Nagaland	16.6	7,74,930	47
18. Orissa	155.7	2,63,70,271	169
19. Punjab	50.4	1,67,88,915	333
20. Rajasthan	342.2	3,42,61,862	100
21. Sikkim	7.1	3,16,385	45
22. Tamil Nadu	130.1[5]	4,84,08,077	372
23. Tripura	10.5	20,53,058	196
24. Uttar Pradesh	294.4[5]	11,08,62,013	377
25. West Bengal	88.8[5]	5,45,80,647	615
Union Territories			
1. Andaman and Nicobar Islands	8.3	1,88,741	23
2. Chandigarh	0.1	4,51,610	3,961
3. Dadra and Nagar Haveli	0.5	1,03,676	211
4. Daman and Diu	0.11	78,981	718
5. Delhi	1.5	62,20,406	4,194
6. Lakshadweep	.03	40,249	1,258
7. Pondicherry	0.5	6,04,471	1,229

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1. The figure excludes population of areas under unlawful occupation of Pakistan and China where census could not be taken.
2. The total area of the country represents provisional 'Geographical Areas' as on 31 March 1982, supplied by the Survey of India. The area includes 78,114 sq km under illegal occupation of Pakistan, 5,180 sq km illegally handed over by Pakistan to China and 37,555 sq km under illegal occupation of China in Ladakh district.
3. The density has been worked out on a comparable data.
4. Projected figures for 1981.
5. The area figures are provisional.

TABLE 1.3 DENSITY AND INCREASE IN POPULATION

Year	Density per sq km	Decade	Percentage increase in population
1901	77	—	—
1911	82	1901—11	5.8
1921	81	1911—21	0.3
1931	90	1921—31	11.0
1941	103	1931—41	14.2
1951	117	1941—51	13.3
1961	142	1951—61	21.5
1971	177[1]	1961—71	24.8
1981[2]	216[1]	1971—81	25.0

1. Density has been worked out on a comparable data.
2. 1981 figures have been worked out after including projected figures for Assam

Literacy rates would be more meaningful if one were to exclude the population in the age group 0-4 from the total population. However, at this stage, this information is not available since it would only be generated through further tabulations. Therefore, the entire population is being taken into account, including the population in the age group 0-4. According to the 1981 census, the literacy percentage was 36.23. Of this 46.89 per cent of males and 24.82 per cent of females were literate. Table 1.4 presents the literacy rates in the country. In working out these rates for 1981, the population of Assam has been excluded. The 1951 rates exclude Jammu and Kashmir.

TABLE 1.4 LITERACY RATE PER 1,000 BY SEX

Year	Males	Females	Persons
1901	98	7	54
1911	106	11	59
1921	122	18	72
1931	156	29	95
1941	249	73	161
1951	250	79	167
1961	344	130	240
1971	395	187	295
1981	469	248	362

The steady improvement in the proportion of literates among both males and females is apparent from table 1.5. In particular, the improvement in the case

TABLE 1.5 POPULATION, NUMBER OF LITERATES AND LITERACY RATES FOR 1981

	1981								
	POPULATION			LITERATES			PERCENTAGE OF LITERATES TO TOTAL POPULATION		
	Persons	Male	Female	Persons	Male	Female	Persons	Male	Female
INDIA[1] . .	66,52,87,849	34,39,30,423	32,13,57,426	24,10,31,849	16,12,85,568	7,97,46,281	36.23	46.89	24.82
States									
1. Andhra Pradesh . .	5,35,49,673	2,71,08,922	2,64,40,751	1,60,34,818	1,06,42,377	53,92,441	29.94	39.26	20.39
2. Assam[1] . .	—	—	—	—	—	—	—	—	—
3. Bihar . .	6,99,14,734	3,59,30,560	3,39,84,174	1,83,21,004	1,36,91,472	46,29,532	26.20	38.11	13.62
4. Gujarat . .	3,40,85,799	1,75,52,640	1,65,33,159	1,48,95,844	95,55,269	53,40,575	43.70	54.44	32.30
5. Haryana . .	1,29,22,618	69,09,938	60,12,680	46,69,898	33,30,658	13,39,240	36.14	48.20	22.27
6. Himachal Pradesh .	42,80,818	21,69,931	21,10,887	18,18,287	11,54,281	6,64,006	42.48	53.19	31.46
7. Jammu and Kashmir[1] . .	59,87,389	31,64,660	28,22,729	15,96,776	11,48,569	4,48,207	26.67	36.29	15.88
8. Karnataka . .	3,71,35,714	1,89,22,627	1,82,13,087	1,42,82,717	92,36,276	50,46,441	38.46	48.81	27.71
9. Kerala . .	2,54,53,680	1,25,27,767	1,29,25,913	1,79,24,732	94,28,092	84,96,640	70.42	75.26	65.73
10. Madhya Pradesh . .	5,21,78,844	2,68,86,305	2,52,92,539	1,45,44,568	1,06,17,302	39,27,266	27.87	39.49	15.53
11. Maharashtra . .	6,27,84,171	3,24,15,126	3,03,69,045	2,96,20,806	1,90,56,503	1,05,64,303	47.18	58.79	34.79
12. Manipur . .	14,20,953	7,21,006	6,99,947	5,87,618	3,84,231	2,03,387	41.35	53.29	29.06
13. Meghalaya . .	13,35,819	6,83,710	6,52,109	4,55,191	2,59,024	1,96,167	34.08	37.89	30.08
14. Nagaland . .	7,74,930	4,15,910	3,59,020	3,29,878	2,08,195	1,21,683	42.57	50.06	33.89
15. Orissa . .	2,63,70,271	1,33,09,786	1,30,60,485	90,27,205	62,68,643	27,58,562	34.23	47.10	21.12
16. Punjab . .	1,67,88,915	89,37,210	78,51,705	68,60,349	42,14,878	26,45,471	40.86	47.16	33.69
17. Rajasthan . .	3,42,61,862	1,78,54,154	1,64,07,708	83,54,117	64,81,156	18,72,961	24.38	36.30	11.42
18. Sikkim . .	3,16,385	1,72,440	1,43,945	1,07,738	75,779	31,959	34.05	43.95	22.20
19. Tamil Nadu . .	4,84,08,077	2,44,87,624	2,39,20,453	2,26,37,659	1,42,67,331	83,70,328	46.76	58.26	34.99
20. Tripura . .	20,53,058	10,54,846	9,98,212	8,64,799	5,45,401	3,19,398	42.12	51.70	32.00
21. Uttar Pradesh . .	11,08,62,013	5,88,19,276	5,20,42,737	3,01,05,260	2,77,98,451	73,06,809	27.16	38.76	14.04
22. West Bengal . .	5,45,80,647	2,85,60,901	2.60,19,746	2,23,44,153	1,44,73,045	78,71,108	40.94	50.67	30.25

TABLE 1.5 (Continued)

Union Territories									
1. Andaman and Nicobar Islands .	1,88,741	1,07,261	81,480	97,321	62,983	34,338	51.56	58.72	42.14
2. Arunachal Pradesh[2] . .	6,31,839	3,39,322	2,92,517	1,31,333	98,211	33,122	20.79	28.94	11.32
3. Chandigarh . .	4,51,610	2,55,278	1,96,332	2,92,580	1,76,130	1,16,450	64.79	69.00	59.31
4. Dadra and Nagar Haveli . .	1,03,676	52,515	51,161	27,655	19,072	8,583	26.67	36.32	16.78
5. Delhi . .	62,20,406	34,40,081	27,80,325	38,28,326	23,52,883	14,75,443	61.54	68.40	53.07
6. Goa[2], Daman and Diu . .	10,86,730	5,48,450	5,38,280	6,15,752	3,59,731	2,56,021	56.66	65.59	47.56
7. Lakshadweep . .	40,249	20,377	19,872	22,165	13,293	8,872	55.07	65.24	44.65
8. Mizoram[2] . .	4,93,757	2,57.239	2,36,518	2,95,685	1,65,812	1,29,873	59.88	64.46	54.91
9. Pondicherry . .	6,04,471	3,04,561	2,99,910	3,37,615	2,00,500	1,37,095	55.85	65.84	45.71

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[1] The figures for India and Jammu and Kashmir exclude the population of area under unlawful occupation of Pakistan and China. Figures for India also exclude the population of Assam where census could not be held in 1981.

[2] Arunachal Pradesh and Mizoram attained statehood on 20 February 1987 and Goa attained statehood on 30 May 1987.

of females is noteworthy. However, nearly half the males and three-fourth of the females in the country are still illiterate. Of the total population, nearly 64 per cent of the people are still illiterate.

RELIGIONS

Table 1.6 shows the comparative figures of total population and related percentage of major religions and persuasions according to 1971 and the 1981 census.

TABLE 1.6 POPULATION OF MAJOR RELIGIONS AND PERSUASIONS

	1971		1981[1+2]	
Religious Community	Population	Percentage to total Population	Population	Percentage to total Population
Hindus	45,34,36,630	82.72	54,97,24,717	82.63
Muslims	6,14,18,269	11.20	7,55,71,514	11.36
Christians	1,42,25,045	2.59	1,61,74,498	2.43
Sikhs	1,03,78,891	1.89	1,30,78,146	1.96
Buddhists	38,74,942	0.71	47,19,900	0.71
Jains	26,04,837	0.48	31,92,572	0.48
Other Persuasions[3]	21,84,955	0.40	27,66,285	0.42
Religion not stated	36,083	0.01	60,217	0.01

1. The 1981 figures are based on the information on religion of heads of households tabulated through the household schedule.
2. Excludes Assam.
3. Other persuasions relate to remaining religions as given by the respondents.

LANGUAGES

A number of languages and dialects are spoken in India. Of these, 15 languages have been specified in the eighth schedule of the Constitution. These are: Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Malayalam, Marathi, Oriya, Punjabi, Sanskrit, Sindhi, Tamil, Telugu and Urdu.

BIRTH AND DEATH RATES

According to a Sample Registration System[1], the birth and death rates for 1986 (provisional) were:

(1) Birth rate—32.4 per 1,000 population, and
(2) Death rate—11.1 per 1,000 population.

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[1] The Sample Registration System was introduced by the Registrar General, India, in 1964-65.

The expectation of life at birth was 52.5 years for males and 52.1 years for females during 1976-80, based on a sample registration system.

The Registration of Births and Deaths Act, 1969 regulates and unifies registration of births and deaths. The state rules, approved by the Government, have been notified by states and union territories under section 30 of the Act.

TOWNS AND VILLAGES

In 1981, there were 3,949 towns[1] and 5,57,137 inhabited and 48,087 uninhabited villages in the country. Among states, Uttar Pradesh had the largest number of towns (704), followed by Tamil Nadu (434), Madhya Pradesh (327) and Maharashtra (307). Nagaland had 7, Sikkim 8, Tripura 10, Himachal Pradesh 47, Jammu and Kashmir 58 and Haryana 81 towns. The Andaman and Nicobar Islands and Dadra and Nagar Haveli had one town each, while Delhi had 30 towns. Uttar Pradesh had 1,12,566 inhabited and 11,680 uninhabited villages. Madhya Pradesh had 71,352 and Sikkim 440 inhabited villages. Kerala and Arunachal Pradesh had no uninhabited village.

There were 12 cities with a population of 10 lakh and above recorded in 1981. These are Calcutta, Greater Bombay, Delhi, Madras, Hyderabad, Ahmadabad, Bangalore, Kanpur, Pune, Nagpur, Lucknow and Jaipur.

The country had 441 districts in 1987.

SCHEDULED CASTES AND TRIBES

According to the 1981 census, the population of the scheduled castes and the scheduled tribes was 10,47,54,623 and 5,16,28,638 respectively. Table 1.7 shows the figures of scheduled castes/scheduled tribes for all states and union territories. About 23.51 per cent of the country's population comprised the scheduled castes and the scheduled tribes.

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[1] An urban area is: (a) All statutory towns, *i.e.*, all places with a municipal corporation, municipal board, cantonment board or notified town area, etc. (b) All other places which have: (i) a minimum population of 5,000; (ii) at least 75 per cent of male working population engaged in non-agricultural pursuits; and (iii) a density of population of at least 400 persons per sq. km. The inhabited and uninhabited villages stand for their literal meaning.

TABLE 1.7 POPULATION OF SCHEDULED CASTES AND TRIBES 1981 CENSUS

	Scheduled Castes	Scheduled Tribes
INDIA[1+2]	10,47,54,623	5,16,28,638
States		
1. Andhra Pradesh	79,61,730	31,76,001
2. Arunachal Pradesh	2,919	4,41,167
3. Assam[1]	—	—
4. Bihar	1,01,42,368	58,10,867
5. Goa	20,619	690
6. Gujarat	24,38,297	48,48,586
7. Haryana[5]	24,64,012	—
8. Himachal Pradesh	10,53,958	1,97,263
9. Jammu and Kashmir[2,5]	4,97,363	—
10. Karnataka[4]	55,95,353	18,25,203
11. Kerala	25,49,382	2,61,475
12. Madhya Pradesh	73,58,533	1,19,87,031
13. Maharashtra	44,79,763	57,72,038
14. Manipur	17,753	3,87,977
15. Meghalaya	5,492	10,76,345
16. Mizoram	135	4,61,907
17. Nagaland[3]	—	6,50,885
18. Orissa	38,65,543	59,15,067
19 Punjab[5]	45,11,703	—
20. Rajasthan	58,38,879	41,83,124
21. Sikkim	18,281	73,623
22. Tamil Nadu	88,81,295	5,20,226
23. Tripura	3,10,384	5,83,920
24. Uttar Pradesh	2,34,53,339	2,32,705
25. West Bengal	1,20,00,768	30,70,672
Union Territories		
1. Andaman and Nicobar Islands[3]	—	22,361
2. Chandigarh[5]	63,621	—
3. Dadra and Nagar Haveli	2,041	81,714
4. Daman and Diu	2,813	10,031
5. Delhi[5]	11,21,643	—
6. Lakshadweep[3]	—	37,760
7. Pondicherry[5]	96,636	—

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1. Excludes Assam where the census could not be held owing to disturbed conditions.
2. The figures exclude population of areas under unlawful occupation of Pakistan and China.
3. No caste was scheduled by the President for Nagaland, Andaman and Nicobar Islands and Lakshadweep.
4. The scheduled tribe population figure of Karnataka would appear to include high returns relating to certain communities with nomenclatures similar to those included in the list of scheduled tribes consequent on the removal area restrictions.
5. No tribe has been scheduled by the President for Haryana, Jammu and Kashmir, Punjab and the union territories of Chandigarh, Delhi and Pondicherry.

2 National Symbols

NATIONAL FLAG

THE national flag is horizontal tricolour of deep saffron (*Kesari*) at the top, white in the middle and dark green at the bottom in equal proportion. The ratio of the width of flag to its length is two to three. In the centre of the white band is a wheel, in navy blue, which represents the *Charkha*. Its design is that of the wheel which appears on the abacus of the Sarnath Lion Capital of Asoka. Its diameter approximates to the width of the white band and it has 24 spokes.

The design of the national flag was adopted by the Constituent Assembly of India on 22 July 1947. Its use and display are regulated by a code.

STATE EMBLEM

The state emblem is an adaptation from the Sarnath Lion Capital of Asoka. In the original, there are four lions, standing back to back, mounted on an abacus with a frieze carrying sculptures in high relief of an elephant, a galloping horse, a bull and a lion separated by intervening wheels over a bell-shaped lotus. Carved out of a single block of polished sandstone, the capital is crowned by the Wheel of the Law (*Dharma Chakra*).

In the state emblem adopted by the Government of India on 26 January 1950, only three lions are visible, the fourth being hidden from view. The wheel appears in relief in the centre of the abacus with a bull on the right and a horse on the left and the outlines of the other wheels on the extreme right and left. The bell-shaped lotus has been omitted. The words *Satyameva Jayate* from the *Mundaka Upanishad,* meaning 'Truth Alone Triumphs,' are inscribed below the abscus in the Devanagari script.

NATIONAL ANTHEM

The song *Jana-gana-mana,* composed by Rabindranath Tagore (1961-1941), was adopted by the Constituent Assembly as the national anthem of India on 24 January 1950. It was first sung on 27 December 1911 at the Calcutta session of the Indian National Congress. The complete song consists of five stanzas. The first stanza constitutes the full version of the national anthem. It reads:

Jana-gana-mana-adhinayaka, jaya he
Bharata-bhagya-vidhata.
Punjaba-Sindhu-Gujrata-Maratha-
Dravida-Utkala-Banga
Vindhya-Himachala-Yamuna-Ganga
Uchchala-jaladhi-taranga.
Tava shubha name jage.
Tava shubha asisa mage,

Gahe tava jaya-gatha,
Jana-gana-mangala-dayaka jaya he
Bharata-bhagya-vidhata.
Jaya he, jaya he, jaya he,
Jaya jaya jaya, jaya he!

The playing time of the full version of the national anthem is approximately 52 seconds. A short version consisting of the first and last lines of the stanza (playing time approximately 20 seconds) is also played on certain occasions. The following is Tagore's English rendering of this stanza:

Thou art the ruler of the minds of all people,
dispenser of India's destiny.
Thy name rouses the hearts of Punjab, Sind, Gujarat and Maratha,
Of the Dravida and Orissa and Bengal;
it echoes in the hills of the Vindhyas and Himalayas,
mingles in the music of Jamuna and Ganges
and is chanted by the waves of the Indian Sea.
They pray for thy blessings and sing thy praise.
The saving of all people waits in thy hand,
thou dispenser of India's destiny.
Victory, victory, victory to thee.

NATIONAL SONG

The song *Vande Mataram*, composed by Bankimchandra Chatterji (1838-94), was a source of inspiration to the people in their struggle for freedom. It has an equal status with *Jana-gana-mana*. The first political occasion when it was sung, was the 1896 session of the Indian National Congress. The following is the text of its first stanza:

Vande Mataram!
Sujalam, suphalam, malayaja shitalam,
Shasyashyamalam, Mataram!
Shubhrajyotsna pulakitayaminim,
Phullakusumita drumadala shobhinim,
Suhasinim sumadhura bhashinim,
Sukhadam, varadam, Mataram!

The English translation of the stanza rendered by Sri Aurobindo (1872-1950) in prose[1] is:

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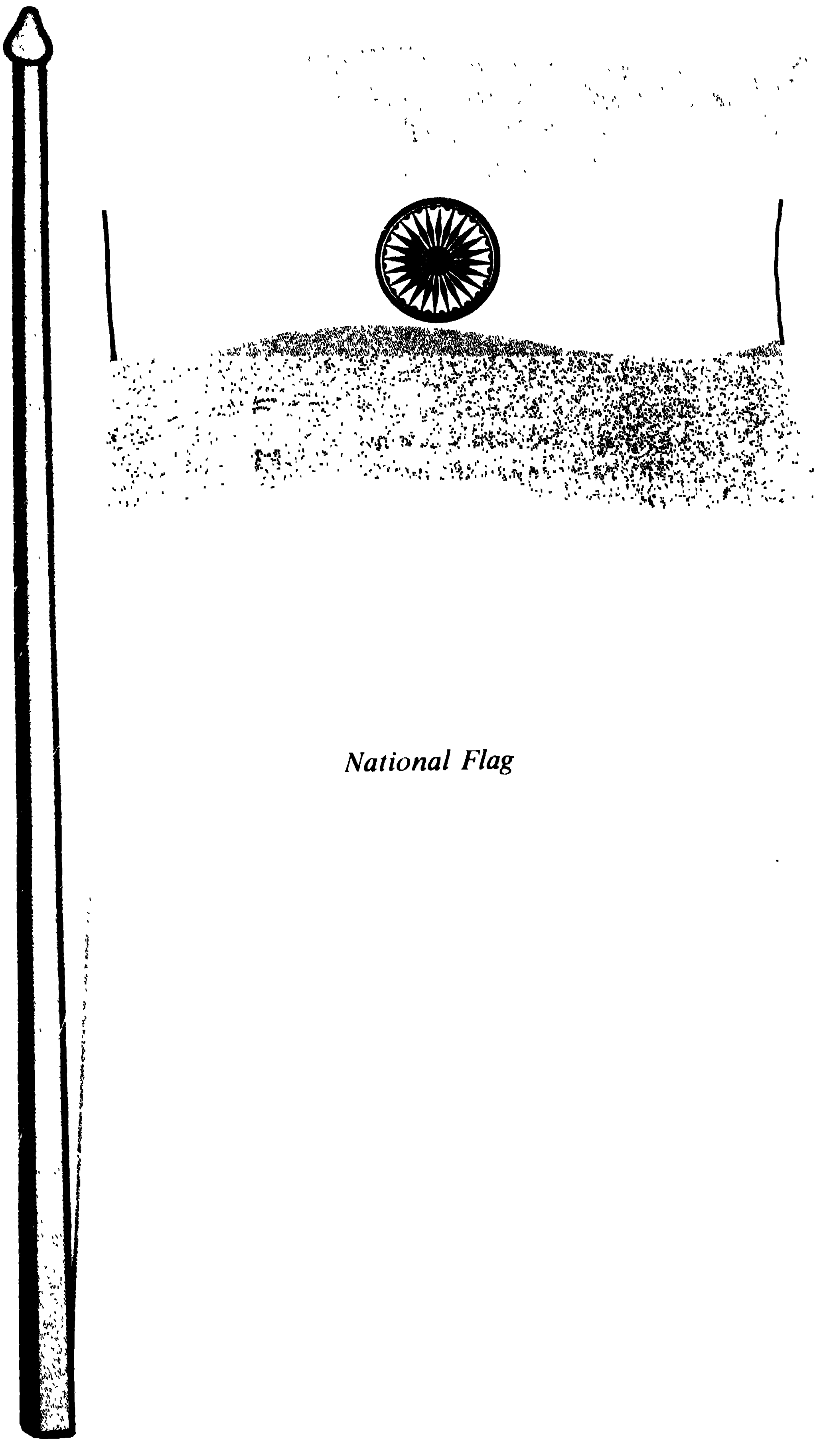
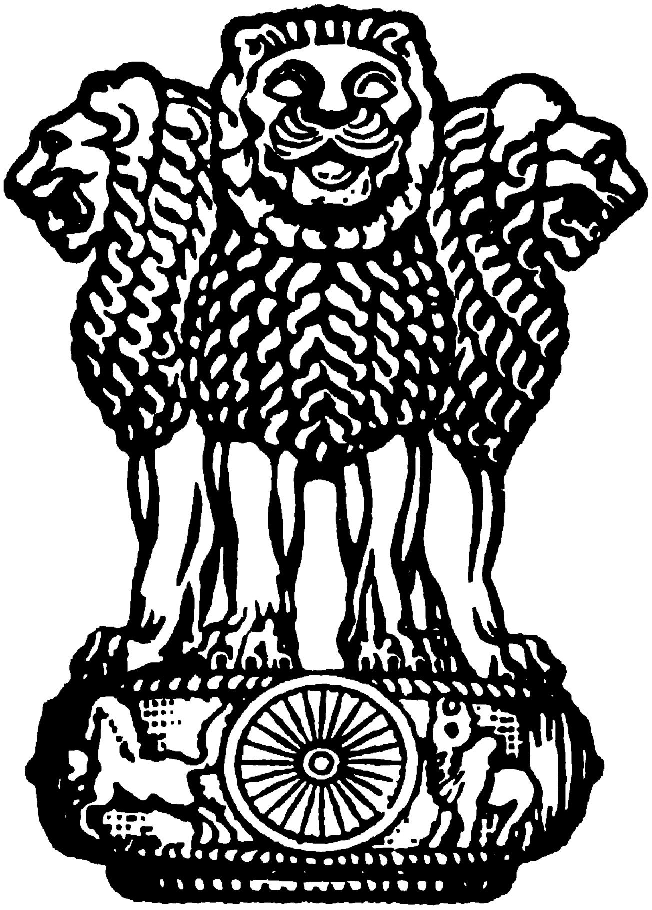
[1] As published in volume 8 of Sri Aurobindo Birth Centenary Library Popular Edition 1972.



National Flag



सत्यमेव जयते

National Emblem

I bow to thee, Mother,
richly-watered, richly-fruited,
cool with the winds of the south,
dark with the crops of the harvests,
the Mother!
Her nights rejoicing in the glory of the moonlight,
her lands clothed beautifully with her trees in flowering bloom,
sweet of laughter, sweet of speech,
the Mother, giver of boons, giver of bliss.

NATIONAL CALENDAR

A uniform national calendar based on the *Saka* era with *Chaitra* as its first month and a normal year of 365 days was adopted from 22 March 1957 along with the Gregorian calendar for the following official purposes: (i) Gazette of India, (ii) news broadcasts by All India Radio, (iii) calendars issued by the Government of India, and (iv) government communications addressed to members of the public.

The dates of the national calendar have a permanent correspondence with the dates of the Gregorian calendar: 1 Chaitra falling on 22 March normally and on 21 March in a leap year.

NATIONAL ANIMAL

The majestic tiger *Panthera tigris* (linnaeus), national animal of India, has always been held in high esteem for its rich colour, illusive design and formidable power. Among the carnivores, the tiger is very gorgeous and attractive with roaring voice as symbol of power. Out of eight races of the species known the world over, the Indian race is the Royal Bengal Tiger. It is found throughout the country and also in Nepal, Bhutan and Bangladesh. As its habitat in India dwindled and its population was reduced to only 1,827 in 1972, the Project Tiger was launched on 1 April 1973. Since then, its population is gradually increasing and it was estimated to be 4,230 in April 1986.

NATIONAL BIRD

The Indian peackock *Pavo cristatus* (linnaeus), national bird of India, is one of the most beautiful birds, particularly the males having the glistening blue neck, breast, fanshape crest and long magnificent tail. The courtship dance of the male by fanning up the tail before the female is most spectacular. From times immemorial, the bird has found a profound place in Indian literature, folklore and legends.

The peacock is widely found in the country in south and east of Indus, Jammu and Kashmir, east Assam, south of Mizoram and the whole of Indian Peninsula. It is fully protected under the Indian Wild Life (Protection) Act, 1972.

3 The Polity

INDIA, a union of states, is a Sovereign Socialist Secular Democratic Republic with a parliamentary system of government. The republic is governed in terms of the Constitution, which was adopted by the Constitutent Assembly on 26 November 1949 and came into force on 26 January 1950.

The Constitution which envisages a parliamentary form of government is federal in structure with unitary features. The President of India is the constitutional head of the executive of the Union. Article 74(1) of the Constitution provides that there shall be a Council of Ministers with the Prime Minister as the head to aid and advise the President who shall, in the exercise of his functions, act in accordance with such advice The real executive power thus vests in the Council of Ministers with the Prime Minister as the head. The Council of Ministers is collectively responsible to the House of the People (Lok Sabha). Similarly, in the states, the governor is the head of the executive, but it is the council of ministers with the chief minister as the head in whom the real executive power vests. The council of ministers of a state is collectively responsible to the legislative assembly.

The Constitution distributes the legislative power between Parliament and the state legislatures and provides for vesting of residual powers in Parliament. The power to amend the Constitution also vests in Parliament.

The Constitution has provisions for the independence of the judiciary, the Comptroller and Auditor-General, public service commissions and the Chief Election Commissioner.

THE UNION AND ITS TERRITORY

India comprises 25 states and seven union territories. The states are: Andhra Pradesh, Assam, Arunachal Pradesh, Bihar, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal. The union territories are: Andaman and Nicobar Islands, Chandigarh, Dadra and Nagar Haveli, Daman and Diu, Delhi, Lakshadweep and Pondicherry.

CITIZENSHIP

The Constitution provides for a single and uniform citizenship for the whole of India. Every person who was at the commencement of the Constitution (26 January 1950) domiciled in the territory of India, (a) was born in the territory of India, or (b) either of whose parents was born in the territory of India, or (c) who had been ordinarily resident in the territory of India for not less than five years immediately preceding that date, became a citizen of India. Special provision was made for migrants from Pakistan and for persons of Indian origin residing abroad. The Citizenship Act, 1955, which supplements the provisions of the

Constitution, provides for the acquisition of citizenship by birth, descent, registration, naturalisation and incorporation of territory. The Act also provides for loss of citizenship by renunciation, termination and deprivation.

FUNDAMENTAL RIGHTS

The Constitution offers all citizens, individually and collectively, some basic freedoms. These are guaranteed in the Constitution in the form of six broad categories of Fundamental Rights which are justiciable. Articles 12 to 35 contained in part III of the Constitution deal with the Fundamental Rights. These are: (i) the right to equality including equality before law, prohibition of discrimination on grounds of religion, race, caste, sex or place of birth and equality of opportunity in matters of employment; (ii) the right to freedom of speech and expression; assembly; association or union; movement; residence; and the right to practise any profession or occupation (some of these rights are subject to the security of the State, friendly relations with foreign countries, public order, decency or morality); (iii) the right against exploitation, prohibiting all forms of forced labour, child labour and traffic in human beings; (iv) the right to freedom of conscience and free profession, practice and propagation of religion; (v) the right of any section of the citizens to conserve their culture, language or script and right of minorities to establish and administer educational institutions of their choice; and (vi) the right to constitutional remedies for the enforcement of Fundamental Rights.

FUNDAMENTAL DUTIES

By the 42nd Amendment of the Constitution, adopted in 1976, Fundamental Duties of the citizens have also been enumberated. Article 51 'A' contained in part IV A of the Constitution deals with the Fundamental Duties. These enjoin upon a citizen, among other things, to abide by the Constitution, to cherish and follow the noble ideals which inspired our national struggle for freedom, to defend the country and render national service when called upon to do so and to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities.

DIRECTIVE PRINCIPLES OF STATE POLICY

The Constitution lays down certain Directive Principles of State Policy which, though not justiciable, are 'fundamental in the governance of the country' and it is 'the duty of the State to apply these principles in making laws'. These lay down that the State shall strive to promote the welfare of the people by securing and protecting as effectively as it may a social order in which justice social, economic and political, shall inform all the institutions of the national life. The State shall direct its policy in such a manner as to secure the right of all men and women to an adequate means of livelihood, equal pay for equal work and within the limits of its economic capacity and development, to make effective provision for securing the right to work, education and to public assistance in the event of unemployment, old age, sickness and disablement or other cases of undeserved want. The State shall also endeavour to secure to workers a living wage, humane conditions of work, a decent standard of life and full involvement of workers in the management of industries.

In the economic sphere, the State is to direct its policy in such a manner as to secure the distribution of ownership and control of the material resources of the community to subserve the common good and to ensure that the operation of the economic system does not result in the concentration of wealth and means of production to common detriment.

Some of the other important directives relate to the provision of opportunities and facilities for children to develop in a healthy manner, free and compulsory education for all children up to the age of 14; promotion of educational and economic interests of the scheduled castes, scheduled tribes and other weaker sections; organisation of village *panchayats;* separation of judiciary from the executive; promulgation of a uniform civil code for the whole country; protection of national monuments; promotion of justice on a basis of equal opportunity; provision of free legal aid; protection and improvement of the environment and safeguarding of forests and wildlife of the country; and promotion of international peace and security, just and honourable relations between nations, respect for international law, treaty obligations and settlement of international disputes by arbitration.

THE UNION

EXECUTIVE

The Union executive consists of the President, the Vice-President and the Council of Ministers with the Prime Minister at the head to aid and advise the President.

PRESIDENT

The President is elected by the members of an electoral college consisting of the elected members of both Houses of Parliament and of the Legislative Assemblies of the States in accordance with the system of proportional representation by means of the single transferable vote. To secure uniformity among the States *inter se* as well as parity between the States as a whole and the Union, suitable weightage is given to each vote. The President must be a citizen of India, not less than 35 years of age and qualified for election as a member of the Lok Sabha. His term of office is five years and he is eligible for re-election. His removal from office is to be in accordance with the procedure prescribed in Article 61 of the Constitution. He may, by writing under his hand addressed to the Vice-President, resign his office.

The executive power of the Union is vested in the President and is exercised by him either directly or through officers subordinate to him in accordance with the Constitution. The supreme command of the defence forces of the Union also vests in him. The President summons, prorogues, addresses, sends messages to Parliament and dissolves the Lok Sabha; promulgates ordinances at any time, except when both Houses of Parliament are in session; makes recommendations for introducing financial and money bills and gives assent to bills; grants pardons, reprieves, respites or remissions of punishment or suspends, remits or commutes sentences in certain cases. When there is a failure of constitutional machinery in a state, he can assume to himself all or any of the functions of the government of that state. The President can proclaim emergency in the country if he is satisfied that a grave emergency exists whereby the security of India or of any part of its territory is threatened whether by war or external aggression or armed rebellion.

VICE-PRESIDENT

The Vice-President is elected by the members of an electoral college consisting of the members of both Houses of Parliament in accordance with the system of proportional representation by means of the single transferable vote. He must be a citizen of India, not less than 35 years of age and eligible for election as a member of the Rajya Sabha (Council of States). His term of office is five years and he is eligible for re-election. His removal from office is to be in accordance with the procedure prescribed in Article 67(b).

The Vice-President is the *ex-officio* Chairman of the Rajya Sabha and acts as the President when the latter is unable to discharge his functions due to absence, illness or any other cause, or till the election of a new President (to be held within six months) when a vacancy is caused by death, resignation or removal, or otherwise of the President. While so acting, he ceases to perform the function of the Chairman of the Rajya Sabha.

COUNCIL OF MINISTERS

There is a Council of Ministers headed by the Prime Minister to aid and advise the President in the exercise of his functions. The Prime Minister is appointed by the President who also appoints other ministers on the advice of the Prime Minister. The Council is collectively responsible to the Lok Sabha. It is the duty of the Prime Minister to communicate to the President all decisions of the Council of Ministers relating to the administration of the affairs of the Union and proposals for legislation and information relating to them.

The Council of Ministers comprises ministers, who are members of the Cabinet, ministers of state (independent charge), ministers of state and deputy ministers.

LEGISLATURE

The legislature of the Union, which is called Parliament, consists of the President and two Houses, known as the Council of States (Rajya Sabha) and the House of the People (Lok Sabha). Each House of the Parliament has to meet within six months of its previous sitting. A joint sitting of the two Houses can be held in certain cases.

RAJYA SABHA

The Constitution provides that the Rajya Sabha shall consist of not more than 250 members, of whom 12 having special knowledge or practical experience in literature, science, art and social service, shall be nominated by the President and the rest shall be representatives of the states and the union territories. The elections to the Rajya Sabha are indirect; those representing the states are elected by the elected members of the legislative assemblies of the states concerned in accordance with the system of proportional representation by means of the single transferable vote and those representing the union territories are chosen in such a manner as Parliament may by law prescribe. The Rajya Sabha is not subject to dissolution, one third of its members retiring on the expiry of every second year.

The membership of the Rajya Sabha is 245. Of these, 233 represent the states and union territories and 12 members being specialists in the field of literature, science, art and social service, are nominated by the President.

LOK SABHA

The Lok Sabha is composed of representatives of the people chosen by direct election on the basis of adult suffrage. The maximum strength of the House envisaged by the Constitution is now 552—up to 530 members to represent the states, up to 20 members to represent the union territories and not more than two members of the Anglo-Indian community to be nominated by the President, if, in his opinion, that community is not adequately represented in the House. The total elective membership of the Lok Sabha is distributed among the states in such a way that the ratio between the number of seats allotted to each state and the population of the state is, so far as practicable, the same for all states. The Lok Sabha at present consists of 545 members. Of these, 530 members are directly elected from 25 states and 13 from seven union territories and two are nominated by the President to represent the Anglo-Indian community.

The allocation of seats in the present Lok Sabha is based on the 1971 census and, under the 42nd Amendment of the Constitution (1976), will continue to be so based until figures of the first census taken after 2000 AD become available. The term of the Lok Sabha, unless sooner dissolved, is five years from the date appointed for its first meeting. However, while a proclamation of emergency is in operation, this period may be extended by Parliament by law for a period not exceeding one year at a time and not extending, in any case, beyond a period of six months after the proclamation has ceased to operate. Eight Lok Sabhas have been constituted so far. The term of each Lok Sabha and its Speaker(s) is given in table 3.1

The state-wise allocation of seats in the two Houses and the party position in the Lok Sabha is given, in table 3.2.

QUALIFICATIONS FOR MEMBERSHIP OF PARLIAMENT

In order to be chosen a member of Parliament, a person must be a citizen of India; must be not less than 30 years of age in the case of the Rajya Sabha and not less than 25 years of age in the case of the Lok Sabha. Additional qualifications may be prescribed by Parliament by law.

FUNCTIONS AND POWERS OF PARLIAMENT

The main functions of Parliament are to make laws for the country and make finances available to the Government for the services of the State. The Council of Ministers is collectively responsible to the Lok Sabha. Parliament is also vested with the powers to impeach the President and to remove judges of the Supreme Court and high courts, the Chief Election Commissioner and the Comptroller and Auditor-General in accordance with the procedure laid down in the Constitution.

All legislation requires the consent of both Houses of Parliament. In case of money bills, however, the will of the Lok Sabha prevails. Delegated legislation is also subject to review and control by Parliament. All financial legislation must be recommended by the President but the Lok Sabha alone has the power to vote the demands for grants presented by the Government. In times of an emergency, and also in some other contingencies laid down in the Constitution, the legislative authority of Parliament also extends to matters enumerated in the State List. The power to amend the Constitution also rests primarily with Parliament, except in some cases where ratification by the legislatures of not less than one-half of the states is prescribed by the Constitution. A list of laws made by Parliament during 1987 and 1988 is given in the Appendices.

PARLIAMENTARY COMMITTEES

In India, as elsewhere, the work done by Parliament is not only varied in nature, but considerable in volume. The time at its disposal is limited. It cannot, therefore, give close consideration to all the legislative and other matters that come up before it. A good deal of its business is, therefore, transacted in the committees.

Both Houses of Parliament have a similar committee structure, with a few exceptions. Their appoinment, terms of office, functions and procedure for conducting their business, are also, more or less, similar and are regulated under the provisions of the rules made by the two Houses under Article 118(1) of the Constitution.

TABLE 3.1 LOK SABHA AND ITS SPEAKER (S)

LOK SABHA			SPEAKER[1]		
	Date of first meeting after its constitution	Date of dissolution	Name	From	To
First Lok Sabha	13 May 1952	4 April 1957[2]	Ganesh Vasudev Mavalankar (1888-1956) M. Ananthasayanam Ayyangar (1891-1978)	15 May 1952 8 March 1956	27 February 1956[3] 10 May 1957
Second Lok Sabha	10 May 1957	31 March 1962[4]	M. Ananthasayanam Ayyangar	11 May 1957	16 April 1962
Third Lok Sabha	16 April 1962	3 March 1967[5]	Hukam Singh (1895-1983)	17 April 1962	16 March 1967
Fourth Lok Sabha	16 March 1967	27 December 1970[6]	Neelam Sanjiva Reddy Dr Gurdial Singh Dhillon	17 March 1967 8 August 1969	19 July 1969[7] 19 March 1971
Fifth Lok Sabha	19 March 1971	18 January 1977[8]	Dr Gurdial Singh Dhillon Bali Ram Bhagat	22 March 1971 5 January 1976	1 December 1975[9] 25 March 1977
Sixth Lok Sabha	25 March 1977	22 August 1979[10]	Neelam Sanjiva Reddy K.S. Hegde	26 March 1977 21 July 1977	13 July 1977[11] 21 January 1980
Seventh Lok Sabha	21 January 1980	31 December 1984[12]	Dr Bal Ram Jakhar	22 January 1980	15 January 1985
Eighth Lok Sabha	15 January 1985		Dr Bal Ram Jakhar	16 January 1985	Till date

1 Under Article 94 of the Constitution in case of dissolution of the Lok Sabha, the Speaker does not vacate his office until immediately before the first meeting of the House after the dissolution.
2 Dissolved 38 days earlier than its normal life.
3 Died.
4 Dissolved 40 days earlier than its normal life.
5 Dissolved 44 days before the expiry of its term.
6 Dissolved one year and 79 days before the expiry of its term.
7. Resigned.
8 The term of the Lok Sabha, which was to expire on 18 March 1976, was extended by one year up to 18 March 1977 by the House of the People (Extension of Duration) Act, 1976. The term was extended for a further period of one year upto 18 March 1978 by the House of the People (Extension of Duration) Amendment Act, 1976. However, the House was dissolved after having been in existence for a period of five years, 10 months and six days.
9 Resigned.
10 The House was dissolved after having been in existence for a period of two years, four months and 28 days.
11 Resigned.
12 Dissolved 20 days before the expiry of its term.

TABLE 3.2 ALLOCATION OF SEATS IN TWO HOUSES OF PARLIAMENT AND PARTY POSITION IN LOK SABHA

(As on 10 October 1988)

State/Union Territory	No. of Seats in Rajya Sabha	LOK SABHA Seats	Cong (I)	Telugu Desam	CPI (M)	Other Parties	Un-attached	Indepen-dent	Total	Vacancies
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
STATES										
1. Andhra Pradesh	18	42	6	29	1	3[1]	1	1	41	1
2. Arunachal Pradesh	1	2	2	—	—	—	—	—	2	—
3. Assam	7	14	5	—	—	7[2]	1	1	14	—
4. Bihar	22	54	46	—	—	5[3]	—	1	52	2
5. Goa	1	2	2	—	—	—	—	—	2	—
6. Gujarat	11	26	23	—	—	3[4]	—	—	26	—
7. Haryana	5	10	7	—	—	2[5]	—	—	9	1
8. Himachal Pradesh	3	4	4	—	—	—	—	—	4	—
9. Jammu and Kashmir	4	6	2	—	—	3[6]	—	—	5	1
10. Karnataka	12	28	24	—	—	4[7]	—	—	28	—
11. Kerala	9	20	13	—	1	5[8]	1	—	19	1
12. Madhya Pradesh	16	40	39	—	—	—	1	—	40	—
13. Maharashtra	19	48	44	—	—	3[9]	—	1	47	1
14. Manipur	1	2	2	—	—	—	—	—	2	—
15. Meghalaya	1	2	2	—	—	—	—	—	2	—
16. Mizoram	1	1	1	—	—	—	—	—	1	—
17. Nagaland	1	1	—	—	—	—	—	—	—	—
18. Orissa	10	21	20	—	—	—	—	—	20	1
19. Punjab	7	13	6	—	—	5[11]	2	—	13	—

TABLE 3.2 (Continued)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
20. Rajasthan	10	25	25	—	—	—	—	—	25[15]	—
21. Sikkim	1	1	—	—	—	1[11]	—	-	1	—
22. Tamil Nadu	18	39	25	—	—	13[12]	1	—	37	2
23. Tripura	1	2	—	—	2	-	—	—	2	—
24. Uttar Pradesh	34	85	80	—	—	1[13]	2	—	84	1
25. West Bengal	16	42	16	—	18	8[14]		—	42	—
UNION TERRITORIES										
1. Andaman and Nicobar Islands	—	1	1	—	—	—	—	—	1	—
2. Chandigarh	—	1	1	—	—	—	—	—	1	—
3. Dadra and Nagar Haveli	—	1	—	—	—	—	-	1	1	-
4. Daman and Diu	—	1	—	—	—	—	—	—	—	1
5. Delhi	3	7	7	—	—	—	—	—	7	1
6. Lakshadweep	—	1	1	—	—	—	—	—	1	—
7. Pondicherry	1	1	1	—	—	—	—	—	1	—
NOMINATED										
1. Under Article 331 of the Constitution (Anglo-Indian)	—	2	—	—	—	—	-	—	2	—
2. Under Article 80(1) (a) of the Constitution	12	—	—	—	—	—	—	—	—	—
	245	545	402	29	22	63	9	8	533[15]	12

1. Janata-1, CPI(M) -1, and BJP-1
2. AGP-6, PICA-1
3. Janata-3, and CPI-2
4. Janata-2, and BJP-1
5. Lok Dal-2
6. J and K National Conference-3.
7. Janata-4
8. Muslim League-2; Kerala Congress-2; and Janata-1.
9. Janata-2; Peasants and Workers Party of India-1
10. Akali Dal (Badal)-3, and Akali Dal (Barnala)-2
11. Sikkim Sangram Parishad-1.
12. AIADMK (I)-7, AIADMK (II)-4, and DMK-2
13. Lok Dal-1.
14. CPI-3; RSP-3; and Forward Block-2.
15. Excluding the Speaker.

Broadly, parliamentary committees are of two kinds—standing committees and *ad hoc* committees. The former are elected or appointed every year or periodically and their work goes on, more or less, on a continuous basis. The latter are appointed on an *ad hoc* basis as the need arises, and they cease to exist as soon as they complete the task assigned to them and have submitted their reports.

Standing Committees: Among the standing committees, the three financial committees—*Committees on Estimates, Public Accounts and Public Undertakings*—constitute a distinct group and they keep an unremitting vigil over governmental spending and performance. While members of the Rajya Sabha are associated with the *Committees on Public Accounts and Public Undertakings,* the members of the *Committee on Estimates* are drawn entirely from the Lok Sabha.

The Estimates Committee reports on 'what economies, improvements in organisation, efficiency or administrative reform consistent with the policy underlying the estimates' may be effected. It also examines whether the money is well laid out within the limits of the policy implied in the estimates and suggests the form in which the estimates shall be presented to Parliament. *The Public Accounts Committee* scrutinises the appropriation and finance accounts of the Government and the reports of the Comptroller and Auditor-General. It ensures that public money is spent in accordance with Parliament's decision and calls attention to cases of waste, extravagance, loss or nugatory expenditure. *The Committee on Public Undertakings* examines the reports and accounts of certain specified public undertakings and reports of the Comptroller and Auditor-General, if any. It also examines whether the public undertakings are being run efficiently and managed in accordance with sound business principles and prudent commercial practices. The control exercised by these committees is of a continuous nature. They gather information through questionnaires, memoranda from representative non-official organisations and knowledgeable individuals, on-the-spot studies of organisations and oral examination of non-official and official witnesses. Between them the financial committees examine and report on a fairly large area of the multifarious governmental activities at the Centre.

These committees have adequate procedures to ensure that their recommendations are given due consideration by the Government. The progress in the implementation of the recommendations as well as any unresolved differences between the committees and the Government are set out in 'Action Taken Reports' which are presented to the House from time to time.

Other standing committees, in each House, divided in terms of their functions, are (i) Committees to inquire: (a) the *Committee on Petitions* examines petitions on bills and on matters of general public interest and also entertains representations on matters concerning Central subjects; and (b) the *Committee on Privileges* examines any question of privilege referred to it by the House or the Speaker/Chairman. (ii) Committees to scrutinise: (a) the *Committee on Government Assurances* keeps track of all the assurances, promises, undertakings, etc., given by ministers in the House and pursues them till they are implemented; (b) the *Committee on Subordinate Legislation* scrutinises and reports to the House whether the power to make regulations, rules, sub-rules, bye-laws, etc., conferred by the Constitution or statutes is being properly exercised by the authorities so authorised; and (c) the *Committee on Papers laid on the Table* examines all the papers laid on the table of the House by ministers, other than statutory notifications and orders which come within the purview of the *Committee on Subordinate Legislation,* to see whether there has been compliance with the provisions of the Constitution, act, rule or regulation under which the paper has been laid; (iii) Committees relating to the day-to-day business of the House: (a) the *Business Advisory Committee* recommends the allocation of time for items of government and other business to be brought before the House; (b) the *Committee on Private Members' Bills and Resolutions of the Lok Sabha* classifies and allocates time to bills introduced by private members, recommends allocation of time for discussion on private members' resolutions and examines Constitution amendment bills before their introduction by private members in the Lok Sabha. The Rajya Sabha does not have such a committee. It is the *Business Advisory Committee* of that House which recommends the allocation of time for the discussion on stage or stages of private members' bills and resolutions; (c) the *Rules Committee* considers matters of procedure and conduct of business in the House and recommends amendments or additions to the Rules; and (d) the *Committee on Absence of Members from the Sittings of the House of the Lok Sabha* considers all applications from members for leave of absence from the sittings of the House. There is no such committee in the Rajya Sabha. Applications from members for leave of absence are considered by the House itself. (iv) The *Committee on the Welfare of Scheduled Castes and Scheduled Tribes,* on which members from both Houses serve, considers all matters relating to the welfare of the scheduled castes and scheduled tribes which come within the purview of the Union Government and keeps a watch whether the constitutional safeguards in respect of these classes are properly implemented. (v) Committees concerned with the provisions of facilities to members: (a) the *General Purpose Committee* considers and advises the Speaker/Chairman on matters concerning the affairs of the House, which do not appropriately fall within the purview of any other parliamentary committee; and (b) the *House Committee* deals with the residential accommodation and other amenities for members. (vi) *The Joint Committee on Salaries and Allowances of Members of Parliament,* constituted under the Salary, Allowances and Pension of Members of Parliament Act, 1954, apart from framing rules for regulating payment of salary, allowances and pension to members of Parliament, also frames rules in respect of amenities like medical, housing, telephone, postal, constituency and secretariat facilities. (vii) *The Joint Committee on Offices of Profit* examines the composition and character of the committees and other bodies appointed by the Central and state governments and union territory administrations and recommends what offices ought to or ought not to disqualify a person for being chosen as and for being a member of either House of Parliament and (viii) *The Library Committee*, consisting of members from both Houses, considers matters concerning the Library of Parliament.

Ad hoc Committees: such committees may be broadly classified under two heads (a) committees which are constituted from time to time, either by the two Houses on a motion adopted in that behalf, or by the Speaker/Chairman to inquire into and report on specific subjects (*e.g. Committee on the Conduct of Certain Members during the President's Address, Committees on Draft Five Year Plans, the Railway Convention Committee, etc.);* and (b) *the Select or Joint Committees on Bills* which are appointed to consider and report on a particular bill. These committees are distinguishable from other *ad hoc* committees in as much as they are concerned with bills and the procedure to be followed by them is laid down in the Rules of Procedure and the Directions by the Speaker/Chairman.

PLANNING OF GOVERNMENT BUSINESS

The Ministry of Parliamentary Affairs has been entrusted with the responsibility of coordinating, planning and arrangement of Government business– both legislative and non-legislative in Lok Sabha and Rajya Sabha. The ministry maintains contacts with leaders of opposition parties/groups for their views on the allocation of time in the two Houses on important issues coming up before Parliament. In order to ascertain their views on national problems, it also arranges meetings of the opposition leaders with the Prime Minister and/or ministers concerned.

PARLIAMENTARY PRIVILEGES

The Constitution provides for freedom of speech in Parliament. No member of Parliament can be held liable to any proceedings in any court in respect of anything said or any vote given by him in Parliament or any of its committees. In other respects, the powers, privileges and immunities of each House of Parliament and of the members and the committees of each House shall be such as may from time to time be defined by Parliament by law, and, until so defined, shall be those of that House and of its members and committees immediately before 20 June 1979.

LEADER OF OPPOSITION IN PARLIAMENT

Giving cognizance to the important role of the leader of opposition in parliamentary democracy, statutory recognition has been accorded to the leaders of opposition in the Rajya Sabha and the Lok Sabha. They also get salary and certain facilities to enable them to discharge their functions in Parliament. Necessary legislation for this was passed by Parliament in August 1977. The Act and the Rules framed thereunder were brought into force on 1 November 1977.

However, in the eighth Lok Sabha so far, no leader of the opposition has had requisite strength in the House. The same position remains in the Rajya Sabha also.

CONSULTATIVE COMMITTEES

The Ministry of Parliamentary Affairs constitutes consultative committees consisting of members of Parliament drawn from both Houses, in order to promote contacts between members and ministers and officials and to foster closer acquaintance of members, through discussion, with principles, problems and working of the Government policies and public administration. There is one such committee for every ministry.

IMPLEMENTATION OF ASSURANCES

The Ministry of Parliamentary Affairs culls out assurances, promises, undertakings, etc., given by ministers in both the Houses of Parliament from the daily proceedings and forwards them to concerned ministries/departments for implementation and necessary information is collected from them and after due scrutiny, statements showing action taken by the Government in implementation of assurances are laid periodically on the tables of the Houses by the Minister of Parliamentary Affairs.

YOUTH PARLIAMENT

The Youth Parliament scheme, which was started in pursuance of the recommendation of the fourth All-India Whips Conference aims at imbibing the spirit of discipline and tolerance, cultivating character in the young minds, strengthening the roots of democracy, inculcating healthy habits of discipline, tolerance of views of others and also to acquaint the younger generation with the practices and procedure of Parliament of the country.

The ministry provides necessary training and encouragement to the states in introducing the scheme. It conducts orientation courses for the principals/ teachers and organisers of the competition in the states/union territories and officers of the ministry visit the states to give on-the-spot theoretical and practical training for conducting a Youth Parliament session.

ADMINISTRATIVE SET-UP

The President had made the Government of India (Allocation of Business) Rules, 1961, under the Constitution and it is transacted in the ministries, departments, secretariats and offices specified in those Rules (all of which are referred to as "departments"). The allocation of business is made by the President on the advice of the Prime Minister, among ministers by assigning one or more departments to the charge of a minister. A cabinet minister is often assisted by a minister of state. Generally, each department has an officer designated as secretary to the Government of India to advise the minister on policy matters and general administration.

CABINET SECRETARIAT

The Cabinet Secretariat has an important coordinating role in the process of decision-making at the highest level and operates under the direction of the Prime Minister. Its functions include submission of cases to the Cabinet and its committees, preparation of the records of decision taken and follow-up action on their implementation. It also serves the committees of secretaries which meet periodically under the chairmanship of the Cabinet Secretary to consider and advise on problems requiring inter-ministerial consultation and coordination. It formulates the rules of business and allocates the business of the Government to the ministries and departments under the direction of the Prime Minister and with the approval of the President. The department obtains and circulates to the President, the Vice-President, the Council of Ministers and other important functionaries, periodical summaries and notes on important developments in each ministry.

The Cabinet is empowered to set up special committees, boards and commissions for issues requiring urgent and exclusive attention. In the recent past, the government set up a Scientific Commission for continuing studies on the effects of Bhopal gas leakage on life systems (August 1985; term extended up to 1989); an Implementation Committee for Commemoration of the 40th Anniversary of India's Independence and the centenary of Jawaharlal Nehru and a National Transportation Safety Board (10 September 1987) to oversee the functions of the sectoral safety organisations and their effectiveness in the implementation of safety related measures involving more than one sector of transport. Besides, the Directorate of Public Grievances headed by a Secretary and the Office of Secretary dealing with matters relating to scheduled castes and scheduled tribes also function under the Cabinet Secretariat.

PUBLIC SERVICES

ALL-INDIA SERVICES

In pursuance of Clause (1) of Article 312 of the Constitution, Parliament passed the All-India Services Act, 1951, which provided for constitution of two services, *viz.*, Indian Administrative Service and Indian Police Service. The Act was amended in 1963 to provide for the constitution of three more all-India services, *viz.*, Indian Service of Engineers (Irrigation, Power, Buildings and Roads), Indian Forest Service and Indian Medical and Health Service. The Indian Forest Service was constituted on 1 July 1966. The other two services have not been constituted so far. The Indian Administrative Service along with other Central services is controlled by the Department of Personnel and Training, while the Indian Police Service is controlled by the Ministry of Home Affairs and the

Indian Forest Service by the Department of Environment, Forests and Wild Life.

CENTRAL SECRETARIAT SERVICES

Under the Central Secretariat Service Scheme, the Section Officers' Grade, Assistants' Grade, all the grades of Central Secretariat Stenographers' Service and the Central Secretariat Clerical Service are decentralised. Recently, in accordance with the recommendations of the Fourth Pay Commission, a new grade designated as Private Secretary has been introduced in the Central Secretariat Stenographers' Service: the modalities of appointment on regular basis are being finalised. The Private Secretary grade will be managed on a centralised basis.

The Selection Grade and Grade I of Central Secretariat Service are centralised. In respect of decentralised cadres, the Department of Personnel and Training monitors and assesses the requirements of different cadres, for fixing zones of promotion and in filling up of vacancies through open competitive and departmental examinations.

The civil services of the Central Government are organised into four groups, *viz.*, Group 'A', Group 'B', Group 'C' and Group 'D'; the grouping being done on the basis of the pay scales attached to the posts. The UPSC and the SSC are the two recruitment agencies, the former for Group 'A' and Group 'B' services/posts and the latter for recruitment to the non-technical Group 'C' posts.

UNION PUBLIC SERVICE COMMISSION

For recruitment to civil services and posts in Groups A and B, the Constitution provides for an independent body known as the Union Public Service Commission. The chairman and members of the Commission are appointed by the President.

To ensure the independence of the Commission, the Constitution debars its chairman or members from further employment after retirement. A member of the Commission is, however, eligible for appointment as chairman of that Commission or a state public service commission, but for no other government employment. The personnel of the commission as on 31 December, 1988 are:

Chairman H K L Capoor *Members* Jagdish Rajan, Jagdish Prakash Gupta, Dr R. Arockiasamy, Surinder Nath, Qazi Mukhtar Ahmed, Smt Rosemillan Bathew Kharbuli.

STAFF SELECTION COMMISSION

On the recommendations of the Administrative Reforms Commission, a Subordinate Service Commission came into existence on 1 July 1976, renamed as the Staff Selection Commission. Its primary function is to make recruitments to non-technical Group C posts in different departments and in subordinate offices except those posts for which recruitment is made by the Railway Service

Commission and industrial establishments. The Commission's headquarters as well as the office of its northern region are located in New Delhi. The offices of the central, western, north-eastern, and southern regions are located at Allahabad, Bombay, Guwahati, Calcutta and Madras respectively. It has one sub-regional office at Raipur.

COMPTROLLER AND AUDITOR GENERAL

The Comptroller and Auditor-General is appointed by the President. The procedure and the grounds for his removal from the office are the same as for a Supreme Court judge. He is not eligible for further office under the Union or a state government after he ceases to hold his office. His duties, powers and conditions of service have been specified by the Comptroller and Auditor-General's (Duties, Powers and Conditions of Service) Act, 1971.

The President on the advice of the Comptroller and Auditor-General prescribes the form in which the accounts of the Union and of the states, are to be kept. His reports on the accounts of the Union and of the states are submitted to the President and the respective Governors and are placed before Parliament and state legislatures.

OFFICIAI LANGUAGE

Hindi in Devanagari script is the official language of the Union and the international form of Indian numerals is to be used for the official purposes of the Union, The Constitution, however, authorised the continued use of English up to 25 January 1965, after which Parliament could further consider the issue. The Official Languages Act, 1963, provided for the continued use of English, in addition to Hindi for official purposes of the Union and also for the transaction of business in Parliament. It also provides that English shall be used for purposes of communication between the Union and a state which has not adopted Hindi as its official language. It does not, however, prevent such a state from using Hindi for communication with the Union or with a state which has adopted Hindi as its official language. The Act also lays down that both Hindi and English shall compusorily be used for certain specified purposes, such as resolutions, general orders, rules, notifications, press communiques, administrative reports, licenses, permits, contracts and agreements, etc.

Under the provisions of Section 8 of the Official Languages, Act, 1963, the Government has framed the Official Languages (Use for Official Purposes of the Union) Rules, 1976, which are intended to provide practical guidelines for the implementation of the official language policy of the Government. The salient features are: (i) the rules apply to all Central Government offices, including any office of a corporation or company owned or controlled by the Central Government; (ii) communications from a Central Government office to a state or union territory in Region A (comprising Uttar Pradesh, Himachal Pradesh, Madhya Pradesh, Bihar, Rajasthan, Haryana, Andaman and Nicobar Islands and

Delhi) shall be in Hindi; (iii) communications from a Central Government office to a state or union territory in Region B (comprising Punjab, Gujarat, Maharashtra and Chandigarh) shall ordinarily be in Hindi; (iv) communications from a Central Government office to a state or union territory other than those indicated in (ii) and (iii) above shall be in English; (v) communications between one ministry or department of the Central Government and another may be in Hindi or in English; (vi) communications between a ministry or department and an attached or subordinate office of the Central Government located in Region A shall be in Hindi on such proportion as the Central Government may determine from time to time (the proportion currently enforced is 80 per cent). Communications between other Central Government offices situated in Region A shall be only in Hindi; (vii) all communications received in Hindi shall be replied to in Hindi. Similarly whenever any application, appeal or representation is made or signed in Hindi shall be replied to in Hindi; (viii) every Central Government employee has the option to use either Hindi or English for recording notes or minutes on a file, without being required to furnish a translation thereof in the other language; (ix) all manuals, codes and other procedural literature relating to Central Government offices shall be prepared both in Hindi and English. All forms, headings of registers, name plates, notice boards and various items of stationary, etc., shall be in Hindi and English; (x) it shall be the responsibility of the officer signing the documents specified in section 3(3) of the Act to ensure that these are issued both in Hindi and English; and (xi) it shall be the responsibility of the administrative head of each Central Government office to ensure that the provisions of the Act, the rules and directions issued under sub-rule 2 are properly complied with and to devise suitable and effective check points for this purpose.

MINISTRIES/DEPARTMENTS OF THE GOVERNMENT

The Government consists of a number of ministries/departments, the number and character varying from time to time on factors such as volume of work, importance attached to certain items, changes of orientation, political expediency, etc. On 15 August 1947, the number of ministries in the Central Government was 18. According to a notification issued on 25 June 1988 under the Government of India (Allocation of Business) Rules, 1961, the Government consists of the following ministries/departments:

1. **Ministry of Agriculture**
    (i) Department of Agriculture and Cooperation
    (ii) Department of Agricultural Research and Education
    (iii) Department of Rural Development
    (iv) Department of Fertilisers
2. **Ministry of Civil Aviation and Tourism**
3. **Ministry of Commerce**

- (i) Department of Commerce
- (ii) Department of Supply

4. **Ministry of Communications**
   - (i) Department of Posts
   - (ii) Department of Telecommunications
5. **Ministry of Defence**
   - (i) Department of Defence
   - (ii) Department of Defence Production and Supplies
   - (iii) Department of Defence Research and Development
6. **Ministry of Energy**
   - (i) Department of Coal
   - (ii) Department of Power
   - (iii) Department of Non-Conventional Energy Sources
7. **Ministry of Environment and Forests**
   - (i) Department of Environment, Forests and Wildlife
8. **Ministry of External Affairs**
9. **Ministry of Finance**
   - (i) Department of Economic Affairs
   - (ii) Department of Expenditure
   - (iii) Department of Revenue
10. **Ministry of Food and Civil Supplies**
    - (i) Department of Food
    - (ii) Department of Civil Supplies
11. **Ministry of Food Processing Industries**
12. **Ministry of Health and Family Welfare**
    - (i) Department of Health
    - (ii) Department of Family Welfare
13. **Ministry of Home Affairs**
    - (i) Department of Internal Security
    - (ii) Department of States
    - (iii) Department of Official Language
    - (iv) Department of Home
14. **Ministry of Human Resource Development**
    - (i) Department of Education
    - (ii) Department of Youth Affairs and Sports
    - (iii) Department of Women and Child Development
    - (iv) Department of Arts
    - (v) Department of Culture
15. **Ministry of Industry**
    - (i) Department of Industrial Development
    - (ii) Department of Company Affairs
    - (iii) Department of Chemicals and Petro-Chemicals
    - (iv) Department of Public Enterprises
16. **Ministry of Information and Broadcasting**

17. **Ministry of Labour**
18. **Ministry of Law and Justice**
    - (i) Department of Legal Affairs
    - (ii) Legislative Department
    - (iii) Department of Justice
19. **Ministry of Parliamentary Affairs**
20. **Ministry of Personnel, Public Grievances and Pensions**
    - (i) Department of Personnel and Training
    - (ii) Department of Administrative Reforms and Public Grievances
    - (iii) Department of Pension and Pensioners' Welfare
21. **Ministry of Petroleum and Natural Gas**
22. **Ministry of Planning**
    - (i) Department of Planning
    - (ii) Department of Statistics
23. **Ministry of Programme Implementation**
24. **Ministry of Railways**
25. **Ministry of Science and Technology**
    - (i) Department of Science and Technology
    - (ii) Department of Scientific and Industrial Research
    - (iii) Department of Biotechnology
26. **Ministry of Steel and Mines**
    - (i) Department of Steel
    - (ii) Department of Mines
27. **Ministry of Surface Transport**
28. **Ministry of Textiles**
29. **Ministry of Urban Development**
30. **Ministry of Water Resources**
31. **Ministry of Welfare**
32. **Department of Atomic Energy**
33. **Department of Electronics**
34. **Department of Ocean Development**
35. **Department of Space**
36. **Cabinet Secretariat**
37. **President's Secretariat**
38. **Prime Minister's Office**
39. **Planning Commission**

ADMINISTRATIVE REFORMS AND PUBLIC GRIEVANCES

The Department of Administrative Reforms and Public Grievances set up in the Ministry of Personnel, Public Grievances and Pensions in March 1985 acts as a nodal agency in the Central Government in the area of administrative reforms/organisation and methods and for evolving policy and coordinating issues relating to redressal of the public grievances in general and grievances pertaining to Central Government agencies. Its main activities include conducting management studies, identification of grievance-prone areas and studies for remedial action, and research and publication in various spheres of public administration.

MANAGEMENT STUDIES

Management consultancy studies constitute one of the major functions of the Department. These cover a wide spectrum of organisations. Proposals for reforms in organisation, structure, systems, methods and procedures are put forth in these studies to bring about greater efficiency, cut down delays and reduce paperwork. Emphasis is, however, given to those areas where citizens come in direct contact with administration. Some of the recent studies are: simplification of the procedures for payment of advertisement bills in the Directorate of Advertising and Visual Publicity; import clearance for electronic items in the Department of Electronics; emigration clearance; payment of unpaid/unclaimed dividends to the shareholders of joint stock companies; opening of service counters on holidays for the benefit of government servants; review of the role and functions of producers in Doordarshan, etc.

A number of "impact studies" have also been undertaken to evaluate the effectiveness of the recommendations made in the earlier study reports, like working of CGHS dispensaries, disbursement of LIC claims of policy holders, registration of new telephone connections, reduction in bulkiness of tender document, etc.

REDRESS OF PUBLIC GRIEVANCES

The redressal of public grievances occupies a prominent place in the public administration. The strategies adopted include setting up or strengthening of the grievance machinery; concentrating more on identification of system deficiencies that give rise to complaints; securing cooperation and support of voluntary agencies; and utilising the media for transmission of information on various innovative measures taken by the Government and creating awareness among the people about their rights and privileges.

The machinery for redressal of public grievances has been set up at the Centre at three different levels, namely, (i) internal grievances redress machinery within each ministry/department. Under this all ministries/departments have appointed grievances officers and Wednesday has been fixed as meetingless day when officers can be contacted between 10 a.m. and 1 p.m. in their offices; (ii) external machinery in the form of monitoring by the Department of Administrative Reforms and Public Grievances; and (iii) an independent grievance redressal authority—Directorate of Public Grievances—under the Cabinet Secretariat to look after four departments—Railways, Posts, Telecommunications and Economic Affairs (Banking Division).

Standing Committees of Voluntary Agencies have been set up in some ministries/departments to involve voluntary agencies in day-to-day administration in the redressal of public grievances, *e.g.*, Departments of Youth Affairs and Sports, Electronics, Pension and Pensioners' Welfare, Health and Family Welfare and Women and Child Development.

ORGANISATIONAL REVIEWS

Organisational review is another major activity that has received a special attention. In early 1985, all ministries/departments were requested to undertake full review of the administrative organisation, policies and procedures with the object of achieving decentralisation in decision-making process, enforcement of accountability, simplification of rules and procedures, prompt and courteous service to the citizens, etc. The action taken by the ministries/departments is being monitored through reports and meetings taken by the Minister of State for Personnel, Public Grievances and Pensions with the departmental secretaries. As a result, considerable improvement has taken place in the disposal of cases. For instance, the pace of disposal of applications has quickened in Import/Export Trade Control Organistion, Department of Company Affairs and Department of Industrial Development; the time taken for financial clearance of schemes has been reduced; and the Railways have substantially improved the position regarding settlement of claims, etc.

ENFORCEMENT OF ACCOUNTABILITY

An Annual Action Plan has been adopted as a basic instrument for enforcement of accountability in ministries. This has been further supplemented by streamlined procedure for inter-ministerial consultations, fixation of levels for final decision on various categories of cases and revision of annual confidential report form to facilitate objective performance appraisal. The ministries have been asked to fix levels for disposal of various categories of cases and the channel of their submission.

IMPROVING EFFICIENCY IN SECRETARIAT

A number of measures are being pursued to achieve greater efficiency and qualitative disposal of work in the secretariat. These include: decentralisation and delegation, simplification of rules and procedures, revision of manual of office procedure, reduction in the levels of consideration, introduction of desk officer system and functional filing system, simplification of periodical reports and returns, introduction of modern office machines and equipment, etc.

WORK IMPROVEMENT TEAMS

A scheme of work improvement teams, based on the concept of Japanese experience of quality control circle, was formulated by the Department mainly with a view to achieving higher productivity in public organisations. The scheme has been sought to be introduced in organisations having large interface, viz., Railways, Posts, Telecommunications, Delhi Development Authority, Health, Labour, Banking, Insurance and Public Enterprises.

MODERNISATION OF GOVERNMENT OFFICES

A scheme has been introduced to improve the work environment in ministries and departments. It aims at achieving tangible results in the shortest possible time by focussing special attention on a limited area. Accordingly, a section or a unit within an office would be taken up for development into a modern unit. The unit, in turn, would be a model for others to emulate. The basic tenet of the scheme is that improvement should come from within the organisation by making use of the existing resources in an imaginative and innovative manner. An outlay of Rs 25 lakh was sanctioned for it during 1987-88 and it was enhanced to Rs 1 crore during 1988-89. The Department also promotes introduction of modern office machines and equipment in government offices to improve the speed and quality of output and to remove the drudgery from monotonous and repetitive types of work.

RESEARCH AND PUBLICATION

The Department acts as a data bank on administrative reforms measures both at the Centre and in the states. It identifies basic problems in public administration and builds up an inventory of administrative innovations. It also maintains close link with the ministries/departments, state governments and research and training institutions which facilitates exchange of information on the latest developments in public adminstration. It brings out regularly two publications, *Management in Government* (quarterly) and *Civil Services News* (monthly). Besides, the department issues other monographs.

THE STATES

The system of government in the states closely resembles that of the Union.

EXECUTIVE

GOVERNOR

The state executive consists of the Governor and council of ministers with the chief minister at its head. The Governor of a state is appointed by the President for a term of five years and holds office during his pleasure. Only Indian citizens above 35 years of age are eligible for appointment to this office. The executive power of the state is vested in the Governor.

The council of ministers, with the chief minister at the head, aids and advises the Governor in the exercise of his functions except in so far as he is by or under the Constitution required to exercise his functions or any of them in his discretion. In respect of Nagaland, the Governor has special responsibility under Article 371A of the Constitution with respect to law and order and even though it is necessary for him to consult the council of ministers in matters relating to law and order, he can exercise his individual judgment as to the action to be taken.

Similarly, in respect of Arunachal Pradesh, the Governor has special responsibility under Article 371H of the Constitution with respect to law and order and in the discharge of his functions in relation thereto, the Governor shall, after consulting the council of ministers, exercise his individual judgment as to the action to be taken. These are, however, temporary provisions if the President, on receipt of a report from the Governor or otherwise is satisfied that it is no longer necessary for the Governor to have special responsibility with respect to law and order, he may so direct by an order.

Likewise, in the Sixth Schedule which applies to the tribal areas of Assam, Meghalaya, Tripura and Mizoram as specified in para 20 of that schedule, discretionary powers are given to the Governor in the matters relating to sharing of royalties between the district council and the state government.

In Sikkim, the Governor has been given special responsibility for peace and for the social and economic advancement of different sections of the population.

All Governors while discharging such constitutional functions as the appointment of the chief minister of a state or sending a report to the President about the failure of the constitutional machinery in a state or in respect of matters relating to the assent to a bill passed by the legislature, exercise their own judgment.

COUNCIL OF MINISTERS

The chief minister is appointed by the Governor, who also appoints other ministers on the advice of the chief minister. The council of ministers is collectively responsible to the legislative assembly of the state.

LEGISLATURE

For every state, there is a legislature which consists of the Governor and one House or, as the case many be, two Houses. In Bihar, Jammu and Kashmir, Karnataka, Maharashtra and Uttar Pradesh, there are two Houses known as the legislative council and the legislative assembly. In the remaining states, there is only one House known as the legislative assembly. Parliament may, by law, provide for the abolition of an existing legislative council or for the creation of one where it does not exist, if the proposal is supported by a resolution of the legislative assembly concerned.

LEGISLATIVE COUNCIL

The legislative council (*vidhan parishad*) of a state comprises not more than one-third of the total number of members in the legislative assembly of the state and in no case less than 40 members.[1] About one-third of the members of the council are elected by members of the legislative assembly from amongst persons who are not its members, one-third by electorates consisting of members of municipalities, district boards and other local authorities in the state one-twelfth by electorates consisting of persons who have been, for at least three years, engaged in teaching in educational institutions within the state not lower in standard than secondary schools and a further one-twelfth by registered graduates of more than three years' standing. The remaining members are nominated by the Governor from among those who have distinguished themselves in the field of literature, science, art, cooperative movement and social service. The legislative councils are not subject to dissolution but one-third of their members retire every second year.

LEGISLATIVE ASSEMBLY

The legislative assembly (*vidhan sabha*) of a state consists of not more than 500 and not less than 60 members[2] chosen by direct election from territorial constituencies in the state. The demarcation of territorial constituencies is to be done in such a manner that the ratio between the population of each constituency and the number of seats allotted to it, as far as practicable, is the same throughout the state. The term of an assembly is five years unless it is dissolved earlier.

POWERS AND FUNCTIONS

The state legislature has exclusive powers over the subjects enumerated in List II of the Seventh Schedule to the Constitution and concurrent powers over those enumerated in List III. The financial powers of the legislature include authorisation of all expenditure, taxation and borrowing by the state government. The legislative assembly alone has the power to originate money bills. The legislative council can make only recommendations in respect of changes it considers necessary within a period of fourteen days of the receipt of money bill from the assembly. The assembly can accept or reject the recommendations.

RESERVATION OF BILLS

The Governor of a state may reserve any bill for the consideration of the President, Bills relating to subjects like compulsory aquisition of property, measures affecting the powers and the position of high courts, and imposition of taxes on the storage, distribution and sale of water or electricity in inter-state river or river valley development projects should necessarily be so reserved. No bill seeking to impose restrictions on inter-state trade can be introduced in a state legislature without the previous sanction of the President.

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[1] The legislative council of Jammu and Kashmir has 36 members. *vide* Section 50 of the Constitution of Jammu and Kashmir.

[2] The legislative assembly of Sikkim has 32 members, *vide* Article 371 F of the Constitution.

CONTROL OVER EXECUTIVE

The state legislatures, apart from exercising the usual power of financial control, use all the normal parliamentary devices like questions, discussions, debates, adjournment and no-confidence motions and resolutions to keep a watch over the day-to-day work of the executive. They also have their committees on estimates and public accounts to ensure that grants sanctioned by the legislatures are properly utilised.

PLANNING

The apex planning body at the district level is generally the state planning board consisting of the chief minister as the chairman and the finance and the planning ministers of the state and some technical experts as members. The department of planning in the state government provides the secretariat for the board. In many states, the planning process has been decentralised to the district level and in some states, even to the sub-division or block levels. In most of the states, there is a district planning body known as the district planning board or district planning committee or district planning council comprising both official and non-official members. Some states also have a separate set-up consisting of functionaries like district planning officers, economist, credit planner, project appraiser, export training coordinator and an area planner in some of the districts for the formulation of the district plans, which are integrated with the state plan.

UNION TERRITORIES

The union territories are administered by the President acting to such extent as he thinks fit. through an Administrator appointed by him. The Administrators of Andaman and Nicobar Islands, Delhi and Pondicherry are designated as Lt-Governors while the Administrator of Chandigarh is designated as Chief Commissioner. The Governor of Goa is concurrently the Administrator of Dadra and Nagar Haveli and Daman and Diu. Lakshadweep has a separate Administrator.

Pondicherry has legislative assembly and council of ministers. Delhi has a metropolitan council and an executive council. Andaman and Nicobar Islands and Daman and Diu have a *pradesh council* and counsellors appointed from among the members of the pradesh council.

The legislative assembly of a union territory may make laws with respect to matters in the state field, namely those enumerated in List II or List III in the Seventh Schedule in so far as they are applicable in relation to union territories. However, some of the bills require prior approval of the Central Government for its introduction in the legislative assembly. Some of the bills, passed in the legislative assembly, are required to be reserved by the Administrator for the consideration of the President.

The Metropolitan Council in Delhi the Pradesh Councils in Andaman and Nicobar Islands and Daman and Diu have the right to discuss and make recommendations about matters in so far as they relate to their respective territories.

ZONAL COUNCILS

The states and union territories on the mainland except those in the north-eastern region are grouped into zones. Each zone has a high level advisory body known as the zonal council which provides the forum for discussing matters of common interest to the constituent units. Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Rajasthan and the union territories of Chandigarh and Delhi are in the northern zone. The central zone comprises Madhya Pradesh and Uttar Pradesh. Bihar, Orissa, Sikkim and West Bengal are in the eastern zone. Gujarat, Maharashtra and Goa and the union territories of Daman and Diu and Dadra and Nagar Haveli are in the western zone. The southern zone comprises Andhra Pradesh, Karnataka, Kerala and Tamil Nadu and the Union Territory of Pondicherry.

LOCAL GOVERNMENT

In most of the states, municipal corporations have been established for major cities under specific acts of the municipal legislature. These are headed by elected mayors. The administration of the city vests in an elected council and the powers of the corporation are exercised by three authorities namely (i) general council; (ii) standing committees; and (iii) the municipal commissioner/chief executive officer. The standing committees are elected by the council and carry out most of the work of administration including taxation, finance and preparation of the budget, engineering work, health and education services. The power of sanctioning estimates and contracts vests in the three authorities up to specified amounts. The general council appoints most of the officers of the corporation but the municipal commissioner is appointed by the government. The executive powers of the corporation generally vest in the municipal commissioner, who prescribes the duties of the various officers, and supervises their work. The functions of the municipal corporation include public safety, health, education and other conveniences of the citizens as well as construction and maintenance of water works and sewerage, roads, streets, bridges, parks, recreation grounds, markets, shopping centres and so on. Major corporations also undertake works of housing and land development. There is, however, a growing practice of entrusting these works to special urban development authorities. There are 73 municipal corporations in the country. The Calcutta Corporation Act has been recently amended to provide for the system of Mayor-in-Council.

MUNICIPAL COMMITTEE AND COUNCIL

For all other towns and cities, there are municipalities, having elected boards or councils which in turn elect their own presidents. All the members of a municipality constitute general body, which decides all questions of policy and important details of municipal administration. The powers of passing the budget, imposing taxes, voting expenditure and making rules and regulations, vest in the general body. The municipal council, however, mostly functions through committees which exercise delegated powers or make recommendations to the council. The day-to-day work of the municipality is carried on by an executive officer drawn sometimes from state civil service or a state-wise cadre of municipal officers. In many states, however, the municipal councils continue to appoint their own executive officers and other officials.

LOCAL SELF-GOVERNMENT IN DISTRICTS

The system of *Panchayati Raj*, which was introduced in 1959, is generally a three-tier structure of local self-government at the village, block and district levels. The states are, however, free to make changes in the structure to suit local conditions. All Panchayati Raj bodies are organically linked up. Special representation on these bodies is given to backward classes, women and cooperative societies.

ELECTION COMMISSION

The superintendence, direction and control of the preparation of the electoral rolls for, and the conduct of, elections to Parliament and to state legislatures and to the offices of President and Vice-President are vested in the Election Commission, which is a constitutional authority set up in pursuance of Article 324 (1) of the Constitution. Though clause (2) of Article 324 provides that the Election Commission shall consist of the Chief Election Commissioner and such number of other Election Commissioners, if any, as the President may from time to time appoint, the Commission has since its inception consisted only of the Chief Election Commissioner. The independence of the Chief Election Commissioner is sought to be protected by a special constitutional provision to the effect that he shall not be removed from his office except in like manner and on the like grounds as a judge of the Supreme Court, and his conditions of service shall not be varied to his disadvantage after his appointment.

The office of Chief Election Commissioner is at present held by R V S Peri Sastri from 1 January 1986.

The plenary powers vested in the Election Commission under Article 324 of the Constitution are supplemented further by Acts of Parliament, namely, Representation of the People Act, 1950 and 1951, the Presidential and Vice-Presidential Elections Act, 1952, the Government of Union Territories Act, 1963, the Delhi Administration Act, 1966 and the Rules and Orders made thereunder.

RESERVATION OF SEATS

The Constitution (Fifty-Seventh Amendment) Act, 1987, provides for the determination of seats reserved for the scheduled tribes in Arunachal Pradesh, Meghalaya, Mizoram and Nagaland by amending Article 332 of the Constitution. Under the Representation of the People (Amendment) Act, 1987, 39 seats in Arunachal Pradesh, 55 in Meghalaya, 39 in Mizoram and 59 in Nagaland were reserved for the scheduled tribes. The Election Commission identified 55 reserved seats in Meghalaya and 59 in Nagaland. Identification of 30 seats each in Arunachal Pradesh and Mizoram is yet to be undertaken.

ELECTORAL ROLLS

The parliamentary system of government both at the Centre and in the states is based on adult suffrage, whereby all citizens who are not less than 18 years of age and are not disqualified under the Constitution or any law made by the appropriate legislature on certain grounds like non-residence, unsoundness of mind, crime, illegal or corrupt practices, have the right to be registered as voters in any election to the Lok Sabha and legislative assemblies of the states. The number of electors on the electoral rolls at the end of 1987 was 41.97 crore.

GENERAL ELECTIONS

The first general election in India on the basis of adult suffrage was held in 1951-52. This was a simultaneous election both for the Lok Sabha and all the state legislative assemblies (including Part A, B and C states). The second general election held in 1957, shortly after the reorganisation of states was also a simultaneous election to the Lok Sabha and state legislative assemblies. By the time the third general election was held in 1962, elections to the state legislative assemblies of Kerala and Orissa had become out of step with the general election to the Lok Sabha with the result that simultaneous elections could not be held in these two states. Similary in 1967, simultaneous elections could not be held in Nagaland and Pondicherry alongwith the fourth general election to the Lok Sabha. After 1967, general election to most of the legislative assemblies had to be held earlier than normally due with the result that Orissa, Tamil Nadu and West Bengal had simultaneous elections to the Lok Sabha and state legislative assemblies at the fifth general election held in 1971. In 1977 Kerala was the only state where general election to the state legislative assembly was held simultaneously with the sixth general election to the Lok Sabha. When the seventh general election to the Lok Sabha was held in January 1980, elections to constitute new legislative assemblies were held simultaneously only in Manipur and the union territories of Arunachal Pradesh, Goa, Daman and Diu and Pondicherry. Polling for the eighth Lok Sabha election was held on 24, 27 and 28 December 1984 in 20 states and nine union territories except in Assam and

Punjab. The election for the legislative assemblies of Tamil Nadu, Manipur, Arunachal Pradesh and Goa, Daman and Diu were also held simultaneously.

In the case of Assam, the Commission in fulfilment of an assurance given to the Supreme Court, initiated action to undertake intensive revision of electoral rolls of all the assembly constituencies in the state which could not be completed before the commencement of the process of the general election in the rest of the country.

On the basis of the report received from the Punjab Government and also that of the Chief Electoral Officer regarding the prevailing law and order situation in the state, the Commission was satisfied that the election in Punjab could not be held along with the rest of the country. For this purpose, the Representation of the People Act, 1951, was amended and a new section 73A was inserted by an ordinance issued on 20 November 1984. The ordinance was replaced by an Act of Parliament. Except the states of Jammu and Kashmir, Madhya Pradesh, Maharashtra and Uttar Pradesh, all other states and union territories had one day poll.

During March 1985, general elections were held in 11 states and one union territory. Of these, general elections in Bihar, Gujarat, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and Uttar Pradesh were held as the five-year term of the assemblies of these states was due to expire in June/July 1985. Elections to constitute new legislative assemblies of Andhra Pradesh, Karnataka and Himachal Pradesh were necessitated due to premature dissolution of these assemblies on 22 November 1984, 2 January 1985 and 21 January 1985, respectively.

The State of Sikkim and the Union Territory of Pondicherry were under President's Rule from 25 May 1984 and 21 June 1983, and the Commission was informed that the President's Rule would be revoked shortly. Except for Bihar, Maharashtra and Uttar Pradesh, where there was a two-day poll on 2 and 5 March 1985, election was held on a single day on 5 March 1985 in rest of the eight states and one union territory.

The election to constitute the legislative assembly of Punjab was held in September 1985 and that of Assam in December 1985. Simultaneous elections were also held to fill vacant seats in the Lok Sabha from these states. Consequent upon enactment of the State of Mizoram Act, 1986, a new state of Mizoram comprising territories which immediately before that date comprised the Union Territory of Mizoram, came into existence. The new state was redelimited into 40 assembly constituencies. There was, however, no change in the allocation of seats to the Rajya Sabha and the Lok Sabha from Mizoram. The poll to constitute a new legislative assembly was held on 16 February 1987 and the new assembly was duly constituted on 20 February 1987.

The poll to constitute legislative assemblies of Kerala and West Bengal, whose terms were due to expire on 24 June 1987 and 14 June 1987, respectively, was held on 23 March 1987. The poll to constitute new legislative assembly of Jammu and Kashmir, which was dissolved on 7 September 1986, was also held on the same date. The term of the legislative assembly of Haryana was to expire on 24 June 1987 and the poll was held on 17 June 1987. In all these states new assemblies have been constituted.

The erstwhile Union Territory of Arunachal Pradesh was granted statehood from 20 February 1987. Goa was made a full-fledged state from 30 May 1987 and Daman and Diu was retained as a union territory. Goa was given a seat in the Rajya Sabha and allowed to retain both of its seats in the Lok Sabha. Daman and Diu was given a seat in the Lok Sabha.

The term of the Nagaland Assembly was to expire on 28 November 1987. Accordingly, a general election for the legislative assembly was held on 18 November 1987. Similarly, general elections to constitute new assemblies for Meghalaya and Tripura were held on 2 February 1988. Perhaps for the first time in the history of Indian elections, there was a tie of votes between two candidates in the electoral battle at Marak constituency and the winner had to be decided by a draw of lots under section 25 of the Representation of the People Act, 1951.

The President's rule imposed in Punjab on 11 May 1987 was extended beyond the six-month period. The assembly was subsequently dissolved on 6 March 1988. The President's rule was also imposed in Tamil Nadu on 30 January 1988. This was necessitated due to the political instability in the state after the death of the chief minister on 24 December 1987.

PRESIDENTIAL AND VICE-PRESIDENTIAL ELECTIONS

R Venkataraman was elected as the eighth President in the election held on 17 July 1987 and he assumed office on 25 July 1987. Dr Shanker Dayal Sharma was elected unopposed as Vice-President on 21 August 1987.

POLITICAL PARTIES

Political parties play a significant part in elections under the parliamentary system. However, there is no law at present regarding the formation and functioning of political parties in India. The fundamental right to form association which is guaranteed by Article 19 of the Constitution remains unfettered although under clause 4 of the Article it is open to Parliament to make a law imposing reasonable restrictions on the exercise of the right in the interest of sovereignty and integrity of India or public order or morality. The Representation of the People Act also does not refer to political parties even from an electoral point of view except in regard to one or two ancillary matters. It, therefore, became necessary for the Election Commission to evolve a procedure by which it could "recognise" political parties for the limited purpose of regulating the allotment of exclusive election symbols to those which were so "recognised". In 1968, the Commission issued the Election Symbols (Reservation and Allotment) Order to "provide for specification, reservation, choice and allotment of symbols at election in parliamentary and assembly constituencies, for the recognition of political parties in relation thereto and for matters connected therewith".

A recognised political party has been classified either as a "national party" or a "state party" in paragraph 7 of the order. If a political party is recognised in four or more states, it is deemed to be a "national party" and a political party recognised in less than four states, is a "state party" in the state or states in which it is recognised as such.

NATIONAL PARTIES

(1) Bharatiya Janata Party, (2) Communist Party of India, (3) Communist Party of India (Marxist), (4) Indian Congress (Socialist)—(Sarat Chandra Sinha), (5) Indian National Congress, (6) Janata Party, (7) Lok Dal, (8) Lok Dal (Ajit).

STATE PARTIES

(1) All India Anna Dravida Munnetra Kazhagam, (2) All India Forward Bloc, (3) All India Muslim League, (4) Dravida Munnetra Kazhagam, (5) Goa Congress, (6) Hill State People's Democratic Party, (7) Indian Congress (J) - Bhalla Group, (8) Jammu and Kashmir National Conference, (9) Jammu and Kashmir Peoples' Conference, (10) Jammu and Kashmir Panthers Party, (11) Kerala Congress, (12) Kerala Congress (J), (13) Kuki National Assembly, (14) Maharashtrawadi Gomantak Party, (15) Manipur People's Party, (16) Muslim League, (17) Naga National Democratic Party, (18) Peasants and Workers' Party of India, (19) People's Conference, (20) People's Party of Arunachal, (21) Plains Tribal Council of Assam, (22) Public Demands Implementation Convention, (23) Revolutionary Socialist Party, (24) Shiromani Akali Dal, (25) Sikkim Prajatantra Congress, (26) Sikkim Congress (R), (27) Sikkim Sangram Parishad, (28) Tripura Upajati Juba Samiti, (29) Telugu Desam, (30) Asom Gana Parishad, (31) United Minorities Front of Assam, (32) Hill People Union, (33) Mizo National Front (34) Nagaland People's Party.

4 Defence

DEFENCE policy of India aims at promoting and sustaining durable peace in the sub-continent and, at the same time, equipping the defence forces adequately to safeguard against aggression.

The supreme command of the armed forces is vested in the President. The responsibility for national defence, however, rests with the Cabinet. The Defence Minister is responsible to Parliament for all matters concerning defence. The administrative and operational control of the armed forces is exercised by the Ministry of Defence and the three services headquarters. The Ministry of Defence acts as the central agency for ensuring the coordinated development of the three services, for conveying the Government's decision on policy matters to the three services headquarters for implementation and for obtaining financial sanction for defence expenditure. The defence expenditure to gross domestic product is around four per cent.

ORGANISATION

The three services function under their respective Chiefs of Staff. As on 31 October 1988, the Chiefs of Staff were:

Chief of the Army Staff:	General V N Sharma
Chief of the Naval Staff:	Admiral J G Nadkarni
Chief of the Air Staff:	Air Chief Marshal S K Mehra

ARMY

At the Army Headquarters in New Delhi, the Chief of the Army Staff is assisted by the Vice-Chief of the Army Staff and five other Principal Staff Officers namely, the Deputy Chief of the Army Staff, the Adjutant General, the Quartermaster-General, the Master-General of Ordnance and the Military Secretary, besides a Head of Branch, namely, the Engineer-in-Chief.

The Army is organised into five commands, *viz.*, Southern, Eastern, Western, Central and Northern. Each command is under a General Officer Commanding-in-Chief who holds the rank of Lieutenant-General. A General Officer Commanding-in-Chief is the Commander of a demarcated geographical area and has both field and static formations under his command. The major field formations are Corps, Division and Brigade, commanded by a General Officer Commanding of the rank of Lieutenant-General, a General-Officer Commanding of the rank of Major-General and a Brigadier, respectively. The major static formations are Areas, independent Sub-Areas and Sub-Areas. An Area is commanded by a General Officer Commanding of the rank of Major-General and an independent Sub-Area by a Brigadier.

The Army consists of a number of arms and services. These are Armoured Corps, Regiment of Artillery, Corps of Engineers, Corps of Signals, Infantry, Army Service Corps, Military Nursing Service, Army Medical Corps, Army

Dental Corps, Army Ordnance Corps. Corps of Electrical and Mechanical Engineers, Remount and Veterinary Corps, Military Farms Service, Army Education Corps, Intelligence Corps, Corps of Military Police, Judge Advocate General Department, Army Physical Training Corps, Pioneer Corps, Army Postal Service Corps, Recruiting Organisation, Record Offices, Colleges, Schools, Depots, Boys Establishments and Selection Centres, Territorial Army and Defence Security Corps.

NAVY

The Chief of the Naval Staff at the Naval Headquarters, New Delhi exercises control on the Indian Navy through a chain of three commands: Western, Eastern and Southern, each under a Flag Officer Commanding-in-Chief, having their Headquarters at Bombay, Vishakhapatnam and Cochin, respectively. At the Naval Headquarters, he is assisted by five Principal Staff Officers, namely, the Vice-Chief of the Naval Staff, Chief of Personnel, Chief of Material, Deputy Chief of the Naval Staff and Controller of Logistic Support

The Navy has two fleets, Western Fleet and Eastern Fleet, which consist of the aircraft carriers, destroyers, frigates, including some of the latest type of anti submarine and anti-aircraft frigates, submarine and submarine depot ship, anti-submarine patrol vessels and other special vessels.

The Navy has a sizeable fleet of air arm with various types of aircraft and helicopters. In addition, there are survey ships, training ships, fleet tankers, landing craft and a number of auxiliary craft Survey units of the Navy have charted the seas which wash the shores and the navigational charts, produced by the Indian Navy surveyers, meet the international standards and are used by the navies of the world.

The latest additions in the Naval fleets, *viz.*, second aircraft carrier *INS Viraat*, (which carries Jump, Jets, Sea Harriers and Sea King helicopters), modern submarines, missile boats and indigenously constructed *Godavari* class frigates fitted with surface to surface missiles/surface to air missiles (SSMs/SAMs), considerably add to the punch capability of the Navy.

The only unified command in the country headed by a naval officer, the Fortress Commander, Andaman and Nicobar, ensures the security of our island territories in the Bay of Bengal and the exclusive economic zone around them. The Naval air station at Port Blair, *INS Utkrosh*, not only carries out the air surveillance of these far-flung islands, but also renders timely and effective assistance to the civil administration and the islanders in remote areas. A floating dry dock has been acquired and positioned at Port Blair for augmenting the Navy's ship repair capability in the Andaman and Nicobar islands.

The Prime Minister laid the foundation stone of the country's third Naval Base at Karwar on 27 October 1986.

During 1987-88, naval ships *Sindhudhvaj* (June 1987), *Magar* (July 1987), *Sindhuraj* (October 1987), *Cuddalore* (October 1987), *Cannanore* (December 1987), *Runvijay* (December 1987), *LCU-39* (March 1987) and *Nirbhik*

(December 1987) were added to the Indian Navy. The Navy also acquired a nuclear submarine. It arrived at Vishakhapatnam in January 1988 and was commissioned as *INS Chakra* in February 1988. This is an important milestone in the growth of the Navy.

COAST GUARD

The Coast Guard was constituted as an armed force in 1978, under the Coast Guard Act, to protect the maritime and other national interests in the maritime zones of India which cover a sea area of approximately 28 lakh square kilometres. The Ministry of Defence exercises administrative control over it through Director-General, Coast Guard with his headquarters presently located at New Delhi. The national maritime zones, being the area of responsibility of the service, have been divided into three regions, namely, western, eastern and Andaman and Nicobar with regional headquarters located at Bombay, Madras and Port Blair, respectively. The regions are further sub-divided into ten districts, one in each of the eight coastal states on the mainland and two in the Andaman and Nicobar Islands. The Coast Guard facilities on shore are established in step with the development of the service and increase in its force level. Presently, the Coast Guard district headquarters/stations are functioning at Vadinar and Porbandar in Gujarat, Cochin in Kerala, Mandapam in Tamil Nadu, Vishakhapatnam in Andhra Pradesh, Haldia in West Bengal, Diglipur and Campbell Bay in the Andaman and Nicobar Islands. A Coast Guard Air Enclave is functioning at Goa, while Coast Guard air stations/squadrons are operational at Daman and Calcutta. Future plans include establishment of coast guard headquarters at New Mangalore, Goa and Paradip and stations at Tuticorin, Kavaratti and Kamorta and air station at Tanjore. Efforts are being made to build up the force level of the service with the induction of specialised ships and aircraft to make the service functionally more effective.

The limited resources now available to the service are being deployed in high risk area of illegal fishing, smuggling, search and rescue, anti-pollution, etc. During 1987 and 1988, a total of 62 foreign fishing trawlers were apprehended, for illegal fishing in our waters. The Coast Guard ships and aircraft regularly assist the Customs authorities in anti-smuggling operations and have frequently been responsible for confiscating contraband goods. Contraband worth Rs 61.33 crore has been confiscated jointly by Customs authorities and Coast Guard ships in 1988-89.

AIR FORCE

The Indian Air Force is organised on both functional as well as geograpical basis. There are five operational commands. These are: Western Air Command, South-Western Air Command, Central Air Command, Eastern Air Command and Southern Air Command. In addition, the Maintenance Command and the Training Command are two functional commands.

At the Air Headquarters in New Delhi, the Chief of the Air Staff is assisted by the Vice-Chief of the Air Staff, Deputy Chief of the Air Staff, Air Officer

Incharge Administration, Air Officer Incharge Maintenance, Air Officer Incharge Personnel and Inspector-General Flight Safety and Inspection. These six Principal Staff Officers are asssited by Assistant Chiefs of Air Staff.

The Air Force fleet consists of fighter-bombers, fighter-interceptors, bombers, transport and logistic support aircraft. The fighter and fighter-bomber fleet comprises *Hunters, Ajeets, MiG-21, MiG-23, Jaguars* and *Mirage-2000.* Indigenously manufactured *MiG-29* aircraft has also been inducted in IAF combat fleet recently. The ageing bomber *Canberra* which has been replaced by Jaguar aircraft, is being used in ancillary roles only. The transport fleet consists of *IL-76s, AN-32s, Boeing-737* and indigenously manufactured *HS-748s. Dornier-228* aircraft replaces the ageing fleet of *Otter* aircraft. The helicopter fleet consists of *Mi-8s, Mi-17s, Mi-26s, Chetaks* and *Cheetahs.* Of these Cheetah and Chetak helicopters are being manufactured in India.

HAL-manufactured *HPT-32* is used for basic training. This has replaced the HAL-built *HT-2* basic trainer. *HJT-16 (Kiran)* and Polish *Iskara* aircraft are used as applied trainer aircraft while the HS-748 is used as transport trainer.

The Air Force Mi-8 helicopters were specially modified to undertake commitments for the Antarctica expedition. In addition, Mi-17 and Chetak helicopters are being extensively used for high altitude operations in logistics support of ground forces.

The Air Force which began humbly with four *Westland Wapiti* aircraft in Karachi in 1932, celebrated its golden jubilee in 1982. In the recent past, modern weapon systems have been acquired to strengthen the combat force. Modern avionics have been fitted in transport and combat aircraft to enhance flight safety and to optimise flight operations. Air Defence Ground Environment is being modernised by developing advanced technology radars and automatic data handling systems.

COMMISSIONED RANKS

The following are the commissioned ranks in the three services; each rank is shown opposite to its equivalent in the other services:

Army	Navy	Air force
General	Admiral	Air Chief Marshal
Lieutenant-General	Vice Admiral	Air Marshal
Major-General	Rear Admiral	Air Vice Marshal
Brigadier	Commodore	Air Commodore
Colonel	Captain	Group Captain
Lieutenant-Colonel	Commander	Wing Commander
Major	Lieutenant-Commander	Squadron Leader
Captain	Lieutenant	Flight Lieutenant
Lieutenant	Sub-Lieutenant	Flying Officer
Second Lieutenant	Acting Sub-Lieutenant	Pilot Officer

RECRUITMENT

All citizens of India, are eligible for recruitment to the armed forces, provided they meet the prescribed physical, medical and educational standards.

ARMY

For recruitment to the Army, the country has been divided into 12 recruiting zones and 71 branch recruiting offices. To keep pace with the modernisation of the Army, it was decided in 1986 that the educational qualification for enrolment in the Army will be class X for non-commissioned and class XII for Commissioned Officer, exceptions being a few trades like washerman, *safaiwala*, barbers and so on, who could be 'non-matric'. This educational concession has also been extended on a selective basis to certain tribes and backward classes from time to time. The overall age bracket for entry into various categories in the Army is between 16-25 years.

After successful experimentation, application system has been introduced throughout the country from 1 April 1988. Applications are invited from prospective candidates after wide publicity. Applications are scrutinised at zonal recruiting offices and call letters are issued to eligible candidates for screening, medical, physical and written examinations. Emphasis is laid on physical fitness, endurance and intelligence and candidates have to go through stringent tests in order to qualify. Finally, a merit list is made and enrolment is carried out depending upon the number of vacancies. The application system is a major step forward and has facilitated selection of the best available manpower for enrolment into the Army.

Army Cadet College Wing (ACC Wing)—service personnel of the Army, who have completed five years of service and are between 22 and 27 years of age are eligible for entry into Army Cadet College Wing, Dehra Dun, where they are initially trained before joining Indian Military Academy. For entry into the ACC Wing, prospective candidates have to qualify a written test, conducted by the Army Headquarters and thereafter to qualify at the services selection boards. The successful candidates are medically examined before induction into ACC.

NAVY

Recruitment for sailors in the Navy is done at over 68 regional recruiting offices all over the country. Sailors are recruited from the age group of 18-20, the minimum educational qualification varying from the elementary stage (for cooks and stewards) to matriculation for artificer apprentices and direct entry sailors. The artificer apprentices are imparted highly skilled technical training in different naval establishments. Direct entry artificers are recruited from among those who have secured a diploma in any branch of engineering (electrical/ radio/ mechanical/ aeronautical/ automobile) and who are in the age group of 18-22.

Depending upon the particular type of entry, recruitment is done twice/ thrice annually, where candidates have to appear for written tests, interviews and a medical examination.

AIR FORCE

The recruitment of airmen in the IAF is made on all-India basis, both in technical and non-technical categories. The educational qualification for different posts varies from matriculation to post-graduation and age 16 to 28 years. Applications from eligible candidates are invited through advertisements published in newspapers four times a year. The selection tests are conducted at various places in the country through 13 airmen selection centres located at various places and centrally controlled by Central Airmen Selection Board, New Delhi. Candidates who pass the written test and are found medically fit, are placed in the all-India merit list.

The Air force provides 44 technical and non-technical trades suited to different aptitudes of the candidates. Initial screening test is conducted at more than 66 centres spread over the country.

TRAINING INSTITUTIONS

SAINIK SCHOOLS

The sainik schools prepare boys academically and physically for entry into the National Defence Academy. There are 18 sainik schools in the country, one in each state, except in Nagaland, Meghalaya, Tripura, Sikkim, Arunachal Pradesh, Mizoram and Goa. The schools are affiliated to the Central Board of Secondary Education and follow the 10+2 pattern. Admission is made to class VI on the basis of an all-India entrance examination held every year in February, to which boys in the age group of 10-11 are eligible to appear. To date, over 4,128 boys from these schools have been selected for National Defence Academy through entrance examinations and Services Selection Board.

RASHTRIYA INDIAN MILITARY COLLEGE

Run on the lines of public schools, the Rashtriya Indian Military College, Dehra Dun, prepares boys for the entrance examination to the National Defence Academy.

NATIONAL DEFENCE ACADEMY

The National Defence Academy, Khadakvasla, conducts a three-year combined basic military training course for potential officers of the three services, after which they receive specialised training at their respective service establishments. The cadets are also trained in academics to the degree level of a university. Admission to the Academy is made on the basis of a qualifying biannual written examination conducted by the Union Public Service Commission at different centres in the country, followed by assessment by Services Selection Board.

Boys who have passed the senior secondary examination or an equivalent examination and are between 16½ and 19 years of age on the first day of the month in which the course starts, are eligible for admission.

INDIAN MILITARY ACADEMY

The Indian Military Academy (IMA), Dehra Dun, is the premier institution for training officers for the Army. Its intake includes cadets passing out of the National Defence Academy, Khadakvasla, who receive one-year training before being commissioned. The IMA holds 1½ year's course for the higher age-group graduates who qualify in the Union Public Service Commission's examination and the Services Selection Board. Graduates selected for specialised commissions in various technical arms are given one year's training at the IMA. A year's training is also imparted at IMA to serving/regular Army junior commissioned officers and non-commissioned officers, who have successfully completed the three-year training course at the Army Cadet College. On completion of training at the IMA, these personnel are granted commissions in the Army.

OFFICERS TRAINING SCHOOL

The Officers Training School (OTS), Madras, trains cadets for short service commission in the Army. The OTS holds a 44-week course for graduates who qualify in the examination conducted by the Union Public Service Commission and the Services Selection Board and who are between 19 and 25 years of age on the first day of the month in which the course starts.

DEFENCE SERVICES STAFF COLLEGE

The Staff College, Wellington, Tamil Nadu, provides training to officers of the Army, Navy and Air Force for holding staff appointments in their own services as well as in the headquarters of inter-services organisations. About 400 officers from the three services including 30 officers from foreign countries and five civilian officers are trained every year.

NATIONAL DEFENCE COLLEGE

The National Defence College, New Delhi, is dedicated to promoting greater understanding amongst military and civil authorities and preparing for higher responsibilities by enabling them to study together those aspects of national and international affairs which significantly influence India's national security, foreign and defence policies. The students attending the 10½ month course are senior officers of the armed forces, civil services and senior officers from friendly countries. For the first time, the college has officers from USA and USSR. The present course strength is 65.

OTHER TRAINING CENTRES AND SCHOOLS

The College of Combat, Mhow, conducts the higher command course, senior command and junior command courses. The College of Military Engineering, Kirkee (Pune), imparts training to the officers and other ranks in all aspects of military engineering. Long courses of over two-year duration are also conducted to train officers up to the degree standard. The Military College of Telecommunication Engineering, Mhow, imparts basic and advanced technical training in telecommunications and signal tactics.

The Armoured Corps Centre and School, Ahmednagar, conducts training in the tactical handling of armoured fighting vehicles and their driving and maintenance. The School of Artillery, Deolali, provides training in field branch and air defence artillery. The Infantry Schools at Mhow and Belgaum conduct courses for infantry officers and men. The College of Material Management, Jabalpur, imparts specialised training in the identification and preservation of all items, including ammunition and explosives stocked by the ordnance depots.

Mechanised Infantry Regimental Centre conducts basic and technical training for recruits of mechanised infantry. In addition, it runs basic and instructor courses on ATGMs for officers, JCOs and other ranks of mechanised infantry. It also carries out conversion training of units converting to mechanised infantry or when change in equipment is involved.

Some of the other Army training centres and schools are High Altitude Warfare School, Gulmarg; Army Service Corps School, Bareilly; EME School, Vadodara; Military College of Electronics and Mechanical Engineering, Secunderabad; College of Defence Management, Secunderabad; Remount and Veterinary Corps Centre and School, Meerut; Army Education Corps Training College and Centre, Pachmarhi; Army School of Physical Training, Pune; Army/Air Transport Support School, Agra; Army Clerks Training School, Aurangabad; Military Intelligence Training School and Depot, Pune; Army School of Mechanical Transport, Bangalore; Corps of Military Police Centre and School, Bangalore; Counter Insurgency and Jungle Warfare School, Vairengte; Armed Forces Medical College, Pune; and Institute of National Integration, Pune.

ARMED FORCES MEDICAL COLLEGE

The Armed Forces Medical College (AFMC), Pune was established on 1 May 1948, as an institution for post-graduate medical education for medical officers of the armed forces and to conduct technical training of para-medical personnel and to carry out research. A graduate wing to train students for the MBBS degree of Pune University was started in August 1962. From 1982 onwards, the annual intake has increased to 130 students including 25 seats reserved for girls. All boys and five girls have permanent commission service liability, whereas 20 girls have liability to serve as short service commissioned officers on graduation. The selection of students is made through an all-India competition. All permanent commissioned liability students are granted stipend varying from Rs 100 to Rs 150 per month and they are also exempted from paying tution fee. Another notable landmark in the growth of the college was the addition of the

College of Nursing in 1964 to impart training to 30 students annually, leading to the B Sc (Nursing) degree of Pune University.

NAVAL ESTABLISHMENTS

The principal training centres for the officers and men of the Navy are located at Cochin. These impart training in gunnery, navigation, torpedo and anti-submarine warfare, communications and aviation. Mechanical engineers and artificers are trained at *INS Shivaji,* Lonavala, Maharashtra. Junior engineers and electrical officers of the service receive initial training at the Engineering College, Lonavala. *INS Hamla,* Marve Malad, Bombay, trains officers and sailors for logistic and domestic functions. *INS Valsura* at Jamnagar trains officers and men of the electrical branch of the service. With most of the ships now fitted with sophisticated electronic equipment, the training establishment has been geared to meet the present requirement of the Navv. *INS Garuda,* Cochin, imparts training to officers and sailors of the aviation cadre. New recruits on joining the Navy are trained at *INS Chilka* near Bhubaneshwar.

AIR FORCE TRAINING INSTITUTES

The Air Force trainees are inducted from four sources, *viz.,* National Defence Academy, ex-airmen, National Cadet Corps and direct entry selection by UPSC. All non-NDA trainees undergo pre-course training at Air Force Station, Begumpet (Secunderabad), before commencing the basic stage of flying training. The basic stage of flying training (stage I) for pilots is imparted at the Air Force Academy, Hyderabad, followed by advanced Flying Training (stage II) at Air Force Station, Bidar, Karnataka and Air Force Station, Hakimpet. Wings and commissions are conferred on successful completion of stage II of flying training. Thereafter, the trainees are bifurcated for applied stage (stage III) of training fighter stream at Hunter and MiG operational conversion units, transport stream at Air Force Station, Yelahanka and helicopter stream at the Helicopter Training School, Hakimpet, Andhra Pradesh. Basic and advanced navigation training and air signal training is conducted at the Navigation and Signal School, Hyderabad. Non-technical ground duty officers and air traffic control officers are trained at the Air Force Academy, Hyderabad. Flying Instructors' School at Tambaram, Madras, was established to train flying instructors of all categories. The College of Air Warfare, Secunderabad, conducts higher joint services and air warefare studies.

The Air Force Adminstrative College, Coimbatore, Tamil Nadu, conducts advanced courses for ground duty officers of non-technical branches and the junior commanders' course for all branches. The Air Force Technical College, Jalahalli, Bangalore, trains officers of technical branches. Selected airmen of warrant officer rank are trained at the Air Force Technical College and the Air Force Administrative College depending on their branch before awarding branch commission.

Airmen for radio, radar, electrical, instrument and photo branches are trained at Jalahalli. Airmen for mechanical stream and supporting non-technical trades pertaining to airframe, engine, weapons, safety equipment and workshop are trained at Tambaram. After the basic training at various institutes, technicians are imparted technical training for particular type of aircraft/system. The training has been restructured to have more 'Hands On' approach and is planned to be accomplished in seven technical type training schools. One of the these schools has already started imparting training at Chandigarh for *Vijay*, *Rakshak* and *Bahadur* aircraft. The other six such schools will be opened shortly. All tradesmen pertaining to motor transport are trained at Avadi, Madras. All supporting non-technical tradesmen like clerks (general duties), clerks (equipment account), clerks (pay accounts), catering assistants, education instructors, IAF police and physical fitness instructors are trained at Sambre. The Ground Training Institutes at Vadodara and Barrackpur train personnel for the maintenance and operation of surface to air missiles and associated equipment. The Paratroopers Training School, Agra, was established for training of paratroopers. Medical and aircrew officers and para-medical staff receive specialised training at the Institute of Aviation Medicine, Bangalore

PRODUCTION AND SUPPLIES

A substantial part of the defence stores needed by the services is now being developed and produced in the country. The responsibility for this has been entrusted to the Department of Defence Production and Supplies in the Ministry of Defence. The Department directs and coordinates production of material and equipment required by the armed forces. It carries out its responsibility through the Directorate of Technical Development and Production, Ordnance factories, Quality Assurance Organisation, Directorate of Standardisation, Defence Research and Development Organisation (DRDO) and eight public sector undertakings.

ORDNANCE FACTORIES

There are 36 ordnance factories, whose main thrust is aimed at meeting the twin objectives of modernisation of the factories and increasing productivity. The factories, widely dispersed over the country on strategic consideration, necessarily function inter-dependently.

The factories produce a wide variety of items and cover a broad spectrum of technology leading to self-reliance. They cater to the requirements of the defence services, para-military forces and civil police. The range of products in these factories includes armoured vehicles, sophisticated anti-tank guns, anti-aircraft guns, field guns, self-propelled guns, mounted guns, mortars, small arms and their related ammunitions. The ordnance factories also produce shells, cartridges, fuses, primers, chemicals and explosives, bombs, rockets, projectiles, grenades, mines, demolition charges, depth charge, pyrotechnic stores, optical and fire control instruments, load-carrying vehicles, light floating bridges, sporting arms and ammunition, civil blasting explosives and a wide variety of general stores. In addition, software items like combat clothing, high altitude clothing, parachutes and mountaineering equipment are also being manufactured.

New major projects under execution are for the manufacture of T-72 MI tanks, infantry combat vehicles (Sarath) and opto electronic devices. Projects are also being planned for the manufacture of the 155 MM Weapon System.

DEFENCE UNDERTAKINGS

There are eight public sector enterprises under the department. These are: (i) Hindustan Aeronautics Ltd. (HAL), (ii) Bharat Electronics Ltd. (BEL), (iii) Bharat Earth Movers Ltd. (BEML), (iv) Mazagon Dock Ltd. (MDL), (v) Garden Reach Shipbuilders and Engineers Ltd. (GRS&E), (vi) Goa Shipyard Ltd. (GSL), (vii) Bharat Dynamic Ltd. (BDL) and (viii) Mishra Dhatu Nigam Ltd. (MIDHANI). Seven of these undertakings are wholly owned by the Government. In the GSL, the MDL owns 53.4 per cent of the shares. Of the remaining shares, 3.6 per cent are held by private shareholders and the rest by the Government. These undertakings have a work force of over 1.07 lakh and capacity for design development and production of a wide variety of equipment and components to meet the requirements of defence services, besides catering to the needs of the civil sector.

The Hindustan Aeronautics Ltd., set up in 1964, has 12 factories; five at Bangalore and one each at Koraput, Nasik, Korwa, Kanpur, Lucknow, Barrackpur and Hyderabad. The principal function of the company is to design, manufacture, repair and overhaul various types of aircraft, helicopters and related aero-engines, avionics, instruments and accessories. HAL is currently manufacturing the jet trainer, *Kiran Mk-II*, the basic trainer HPT-32, a seven– seater multipurpose *Chetak* helicopter and light weight helicopter for AOP role, *Cheetah*. The company is manufacturing under lincense, Jaguar aircraft, its engine and related accessories and avionics. It has been manufacturing MiG-21 BIS under licenses and has been entrusted with the licenses to manufacture MiG-27 aircraft, its engine and related equipment. It has also been entrusted with the manufacturing of light transport aircraft, DC-228, to meet the requirements of civil and defence users. Current aircraft programmes on hand are the advanced light helicopter and the light combat aircraft projects. Indigenisation activities are being actively pursued in order to progressively reduce the import contents of various aircraft being produced at HAL.

The Bharat Electronics Ltd. was established in 1954, with a single unit at Jalahalli, Bangalore, to develop the indigenous electronics industry. Since then, it has grown into a leader in professional electronics. It has four units at Bangalore, Ghaziabad, Pune and Machilipatnam. In addition, three more units are under various stages of construction at Taloja (Maharashtra), Panchkula (Haryana) and Kotdwara (Uttar Pradesh). Two establishments at Hyderabad and Madras are under formation. The items manufactured by the company include low and high power communication equipment in the HF, UHF, VHF and microwave ranges, high power static and mobile radars, static and mobile troposcatters with line of sight equipment, broadcast transmitters, gun control equipment, weapon control system for frigates, IFF equipment and electronic voting machines. The components manufactured by the undertaking include X-ray tubes, black and white TV picture tubes, image converter tubes, germanium and silicon semi-conductors, integrated circuits and magnesium manganese dioxide batteries.

The Bharat Earth Movers Limited (BEML) incorporated in 1964, had commenced operations in January 1965. The Company manufactures heavy earthmoving equipment, such as excavators, bulldozers, dumpers, loaders, scrapers, motorgraders, cranes, etc., sophisticated special assemblies like planetary axles, power shift transmissions and control valves, integral coaches for railways in its three production units at Bangalore, Kolar Gold Fields and Mysore. BEML is setting up facilities to manufacture tank transporting vehicles in addition to the trailers already being produced by it for the Defence Services. It has also supplied air-craft towing tractors to the Air Force and is manufacturing transmissions and allied assemblies for combat vehicles.

The Mazagon Dock Ltd., Bombay, the Goa Shipyard Ltd. and the Garden Reach Shipbuilders and Engineers Ltd., Calcutta, are leading-ship-building and ship-repairing units in the defence public sector having facilities to build sophisticated warships like frigates, seaward defence boats, survey vessels, offshore and onshore patrol vessels. They also build merchant ships like cargo vessels, dredgers, tugs, floating cranes, barges and various types of passenger-cum-cargo vessels. It has in hand the construction of three indigenously designed *Godavari* class frigates. The first of the series, *INS Godavari* was commissioned in December 1983. The second frigate, *INS Ganga*, was commissioned in December 1985. The third frigate, *INS Gomati* was commissioned in April 1988. The second corvette, *INS Kuthar*, was launched in January 1988.

The GRSE, Calcutta, delivered the first bulk-carrier *Lokpriti* to the Moghul Line Ltd. in December 1981. The second one was commissioned during 1984-85. It has already handed over two survey vessels, *Sandhayak* and *Nirdeshak* to the Navy. In addition, it has delivered a number of seaward defence boats and fast patrol craft to the Navy and Coast Guard. Landing ship tank *INS Magar* was commissioned in July 1987.

The GSL has developed from a ship-repairing unit into a medium-sized shipyard on the west coast, building seaward defence boats, landing craft and survey craft for the Navy. It has also entered the offshore field by undertaking construction of offshore support-cum-stand-by vessels.

The Bharat Dynamics Limited was incorporated at Hyderabad as a public-sector undertaking in 1970 with a view to establishing a technological base to undertake manufacture and development of missile weapon systems.

The company began its production in technical collaboration with Aerospatiale of France in 1971 to produce SS11B1, a first generation anti-tank missile executed for the Army and the Air Force. The successful completion of SS11B1 paved the way to embark on the production of a highly sophisticated second generation anti-tank guided missile *Milan*, which is medium range light armoured weapon in collaboration with Euromissile of France in 1981. The progressive increase in the indigenisation of this missile system is still continuing. The company has also diversified and has produced rockets, fuses, sonar modification kits, torpedo electronics, etc.

Considering its expertise and sound technological base, it has been nominated for the production of guided missiles of the integrated guided missiles development programme of the Defence Research and Development Organisation. The company is also engaged in setting up facilities for manufacture of long range second generation anti-tank missile of the heavy armoured class used on the BMP-2 vehicle in collaboration with the Soviet Union.

The Mishra Dhatu Nigam Ltd., Hyderabad, was set up in 1973 to create indigenous capabilities for manufacture of a wide range of sophisticated and strategic special metals and super alloys in various shapes and sizes as required by the several vital industrial sectors, such as nuclear power generation, aeronautics, space, electronic, electrical and engineering industries. The plant has gone into commercial production from July 1983. It includes titanium alloys, special steels including maraging steels, nickel-chromium-iron base, electric resistance alloys, super alloys for gas-turbine engines, soft iron and iron-nickel base soft magnetic alloys and molybdenum and tungsten wires for the incandescent bulb industry.

RESEARCH AND DEVELOPMENT

The Defence Research and Development Organisation (DRDO) was established in 1958 by amalgamating some of the then existing technical development establishments with the Defence Science Organisation. Its responsibilities relate to the design and development of new and sophisticated weapons and equipment, based on the operational requirements projected by the services and to provide help in their indigenous production. It has a network of 46 well-equipped laboratories/establishments.

The DRDO and its laboratories are administered by the Department of Defence Research and Development. The department which is under the Scientific Adviser to the Minister of Defence and Secretary, Defence Research and Development, is also responsible for rendering advice to the Minister of Defence, the three services and inter-services organisations on military operation, equipment and logistic, and formulation of research, design and development plans on various disciplines of importance to defence. The department also functions as the nodal agency for execution of major development programmes of relevance to defence by integration of research, development, testing and production capabilities in various sectors.

The activities of DRDO cover a wide range of disciplines such as aeronautics, rockets and missiles, electronics and instrumentation, combat vehicles, general engineering, naval systems, armament technology including explosives research, computer science, materials, food and agricultural research, biological and behavioural sciences, terrain research, work study and systems analysis. It undertakes research and development projects in all these disciplines either in response to the expressed requirements of the services (staff projects) or in anticipation of future need for defence (technology development projects). Several weapon systems designed and developed by it have been accepted by services. They include Indian Field Gun MkI and II, several types of radars including low level radar for Army and Air Force, hull-mounted sonar for ships of Indian Navy, several types of rockets for air-to-surface, surface-to-surface and anti-sub-marine, etc. Several weapon systems are in advanced stages of development. A major achievement of DRDO has been the successful completion of prototypes of the main battle tank. The prototypes are now undergoing technical evaluation and system integration trials at different work centres.

The major programmes which have been launched recently include development of light combat aircraft incorporating advanced technologies and an integrated guided missile development programme to meet the future missile requirements of the services.

TERRITORIAL ARMY

The Territorial Army is a citizens' volunteer force, which functions on a part-time basis. It was established in 1949 and is designed to give the citizens an opportunity to receive military training during their spare time. The territorials serve the country in times of emergency by relieving the Army of static duties, aiding the civil power in dealing with natural calamities, maintaining essential services in critical situations which threaten the life of the community or security of the country and providing units for the regular army, if and when required. It is composed of infantry units for certain technical units such as railway engineers, general hospitals and oil battalions. In 1983, ecological units were raised as a part of the Territorial Army to restore the ecological balance in certain regions of the country, which is a unique experiment in this field. Territorial Army units are, however, not required to perform military service outside India, save under a general or special order of the Government.

All able-bodied nationals of India in the age group of 18-42 years (with relaxation in the upper age limit for entry into certain technical units) and possessing the requisite qualifications are eligible to join as officer or other ranks.

NATIONAL CADET CORPS

The National Cadet Corps (NCC) was established in 1948 and is the premier youth organisation in the country. It is open to students of universities, colleges and schools on voluntary basis. It has a strength of over 11 lakh cadets (both boys and girls), studying in nearly 10,000 educational institutions.

It aims at development of qualities such as leadership, comradeship, spirit of sportsmanship and the ideal of service among the youth. It also caters to creation of a force of disciplined and trained manpower which in a national emergency could be of assistance to the country. It also aims at training students with a view to developing officer-like qualities and enabling them to obtain commission in the armed forces. Its cadets and commissioned officers, however, have no liability for active military service.

It is headed by a Lieutenant-General. At the functional level, there are 16 directorates, which cover all states and union territories. A directorate is headed by a Brigadier in the Army or equivalent from the other two services.

The NCC consists of three divisions, *i.e.*, senior division for college boys, junior division for school boys and the girls division, which has junior and senior units for the school and college-going girls respectively. Its present authorised strength in the senior division is 4.2 lakh cadets. The junior division has an authorised strength of seven lakh cadets.

The training programme of the cadets has a defence bias. Notwithstanding this, adventure-oriented activities, such as mountaineering, trekking, cycling and sailing expeditions, paratraining, gliding, powered-flying, para-sailing, etc., receive emphasis in training. For the past few years, a youth exchange programme with Canada is being implemented. The cadets also get an opportunity to attend camps in Singapore and the United Kingdom and the Victory Day celebrations in Bangladesh. They are sent on foreign cruises on board Indian naval ships as part of attachment training.

In order to foster closer understanding and integration amongst people of the various states, a new national integration programme was initiated in 1983. The aim of the programme is to improve understanding between young cadets of various states through closer contacts. The programme envisages individuals living in the homes of the cadets of other states and working together on development projects with a rural bias. The cadets also participate in social activities. These include blood-donation, tree-plantation, slum clearance, anti-leprosy drive, adult education and helping in Cheshire homes. The cadets also render voluntary service during natural calamities.

WELFARE OF EX-SERVICEMEN

The Directorate-General of Resettlement (DGR) looks after the resettlement of ex-servicemen in government and private services, organising training in vocational and technical trades and promoting and assisting in self-employment ventures. The Central Government has reserved 10 per cent of Group C and 20 per cent of Group D posts for ex-servicemen in all its ministries and departments. The corresponding percentage in Central public undertakings as well as public sector banks in these categories are 14½ per cent and 24½ per cent, respectively. In addition, 10 per cent of posts of Assistant Commandants in Central paramilitary forces have been reserved for ex-servicemen. Ex-servicemen are also re-employed in Defence Security Corps and Ecological Territorial Army task forces in Rajasthan, Uttar Pradesh and Jammu and Kashmir. Most of the states have also provided reservation of posts for ex-servicemen, which varies from two per cent to 20 per cent. The ex-servicemen are allowed relaxation in upper age limit and educational qualifications for employment against reserved vacancies. Special recruitment drives for ex-servicemen have been carried out in the Railways, Delhi Transport Corporation, Delhi Police and some paramilitary forces.

Full military pension is exempted while fixing pay of ex-servicemen on re-employment in case of personnel below officer rank and in case of officer, Rs 500 per month is exempted. The limit for pension plus pension equivalent of gratuity and refixed pay has been raised from Rs 3,500 to Rs 8,000.

Several schemes are being implemented by the states and the Centre to encourage ex-servicemen to get resettled in various self-employment ventures. These include reservation of industrial plots and sheds in industrial complexes and shops by some state governments. There is a 10 per cent reservation for fertiliser dealership for ex-servicemen and 7½ per cent reservation in agencies for petroleum products like LPG/petrol pump/kerosene oil for the severely disabled, widows and motherless dependents of next of kin of service personnel. The DGR has been sponsoring ex-defence officers' companies, after due verification, for providing security services to various public undertakings and government departments. Ex-servicemen owned companies have been sponsored for looking after the communication network. of the ONGC. The other schemes are formation of ex-servicemen transport companies for transportation of coal, LPG for oil companies, payment of 10 per cent subsidy on all items manufactured by ex-servicemen and supplied to the Ministry of Defence, inter-services organisations and the Canteen Stores Department. About 295 ex-servicemen families with farming background have been settled in the Great Nicobar Island. Allotment of 50,000 *bighas* of land has been made to ex-servicemen's families along the belt of the Indira Gandhi Canal, Stage II in Rajasthan. Ex-servicemen have also been offered agencies of Unit Trust of India. Interest subsidy is given from the state welfare funds on laons taken from banks up to a certain limit for some self-employment schemes started by ex-servicemen.

Two new schemes of SEMFEX-I and SEMFEX-II (self-employment for ex-servicemen) have been introduced through the Industrial Development Bank of India from 1 April 1987 and through the National Bank for Agriculture and Rural Development from 15 January 1988, respectively to assist ex-servicemen, disabled ex-servicemen and widows to start self-employment ventures. Under SEMFEX-I, an ex-serviceman can take up a project costing up to Rs 12 lakh for small-scale industrial projects and transportation. The projects will be sanctioned by the state financial corporations with refinance from IDBI for the term loan and seed capital loan. The individual's contribution will be only 10 per cent; 15 per cent of the cost will be given as seed capital loan on soft terms and the balance will be a term loan on usual terms. Training will also be imparted to intending entrepreneurs under the scheme. Under SEMFEX-II, loans can be granted to ex-servicemen for farm and non-farm sector activities and ventures. For non-farming ventures, an ex-serviceman can take loan up to Rs 5 lakh and for farm sector there is no limit. Loans are sanctioned by scheduled banks.

In order to impart and improve skills to enhance the scope for employment and self-employment, both for officers and personnel below officer rank who are retiring, Training Directorate in DGR operates various pre-release training schemes. For personnel below officer rank, training is imparted in technical, non-technical and agro-based vocations, which are organised through various government, semi-government and private institutions.

Under "on the job training scheme" which was launched in March 1981, technical training to non-technical personnel from all the three services is imparted. Under this scheme, selected defence personnel during their last 18 months of service are given nine months' intensive training by various public undertakings throughout the country. Training is imparted in ten basic trades such as fitter, turner, machinist, welder, linemen, moulder, carpenter, plumber, book-binder, etc. Approximately 1,000 service personnel are trained every year under the scheme.

Under the "pre-cum-post release training scheme", 1,000 vacancies are made available in 100 ITIs throughout the country for the retiring service personnel. Another 100 ITIs are being included in the existing list. In addition, pre-release training in small industries service institutes has now been organised in various trades.

Preparing ex-servicemen for self-employment scheme was started in early 1983. Under it, ex-servicemen below officer rank and up to the age of 50 years are provided necessary training guidance and financial assistance to set up their ventures in rural areas near their homes. The target for each district is to train 125 ex-servicemen.

On behalf of DGR, ex-servicemen resettlement training is being organised by *rajya sainik boards* of six states, namely Haryana, Himachal Pradesh, Tamil Nadu, Kerala, Karnataka and Uttar Pradesh to train 400 ex-servicemen annually in different vocations and disciplines. The scheme was introduced by the Ministry of Defence in 1983-84 to train retired defence personnel so as to enable them to secure suitable employment/self-employment. The entire expenditure is met by the Central Government. The important disciplines of training are; (i) agricultural vocations, (ii) TV repair, (iii) video repair, (iv) motor driving, (v) armature winding, (vi) soap manufacturing, and (vii) computer programming. A stipend of Rs 300 per month or the actual expenditure, whichever is less, is paid to ex-servicemen to meet their expenses on travelling, boarding and lodging. Extension of this scheme to Assam and West Bengal is under consideration.

Disabled ex-servicemen/servicemen are imparted technical and non-technical training at Queen Mary's Technical School, Pune, to prepare them for suitable re-employment/self-employment. Over 6,000 ex-servicemen have so far received training in this school. Ex-servicemen are nominated for training in the school on the recommendations of DGR. The school is recognised as technical institution by the Maharashtra Technical Board and the National Council for Vocational Training, Ministry of Labour and Rehabilitation. The National Council for Vocational Training and ITI approved technical courses of two years' duration for electrician, fitter, radio/TV mechanic and one year's duration for diesel machanic, cutting and tailoring and stenography (English), are run by the school. In addition, it also runs school certificate course in dying, painting and powerloom weaving of six months' duration for ex-servicemen/disabled servicemen.

A high level committee on problems of ex-servicemen, appointed by the Government in 1984 made 68 recommendations for resettlement, rehabilitation and welfare of ex-servicemen. A majority of the recommendations have been accepted. The Central departments and states have been requested to implement the recommendations in order to provide effective welfare and resettlement. The emphasis on welfare is mainly in the field of reservation of posts for ex-servicemen in government jobs, reservation of house sites and land allotment, vacation of lands and houses of retiring defence personnel, education of children, medical facilities, extension of canteen facilities, etc.

An important organisation which assists ex-servicemen and their families in close liaison with the local administration is *Kendriya Sainik Board* in DGR. The organisation coordinates the activities of state-level boards called *rajya sainik boards* which in turn control the district level boards known as *zila sainik boards*. A number of welfare funds held by this organisation are used for welfare and rehabilitation of ex-servicemen and disabled personnel. Besides, there are educational facilities for the wards of ex-servicemen and battle casualties and provision for legal assistance, medical assistance and special pension. Special pension is given for war-blinded ex-servicemen and for those whose blindness is attributable to military service.

Consequent to the recommendations of the Fourth Pay Commission, Government has issued orders substantially improving the disability element and constant attendance allowance for all existing disabled pensioners. Additional reliefs are also given and the minimum pension has been raised to Rs 375 per month to cover all existing pensioners and family pensioners.

REHABILITATION OF WAR VICTIMS

Following the Indo-Pak War in 1971, both the Centre and the states formulated a number of schemes to extend benefits and facilities to the war bereaved families particularly the widows, the disabled and their dependents. Amongst the important Central schemes is the one which is related to liberal pensionary concessions for the widows and families of officers and men killed in action and those disabled. The scheme came into operation in February 1972. It covers all those affected in military operations since the Indo-Pak War and operations in Jammu and Kashmir in 1947. These apart, the Central Government meets the full cost of education up to graduation of the dependents of all personnel of the defence and paramilitary forces killed or permanently disabled in the operations.

Another scheme relates to priority in obtaining employment under the Central Government and public undertakings. Disabled servicemen are entitled to Priority-I, besides concessions in age, educational qualifications and medical standards. Up to two dependents of service personnel killed/severely disabled while in service, with 50 per cent disability attributable to military service, are entitled to Priority II—A for purpose of employment. The state schemes include cash grants, ex-gratia allotment of land for agricultural purposes and residential plots on concessional rates.

CANTONMENT BOARDS

Cantonments were established under the Cantonments Act, 1924, to safeguard the health, welfare and security of the armed forces personnel who have to reside in them. The act also provides for municipal administration for the civilian population in the cantonment areas. A board is constituted in each cantonment comprising elected, nominated and ex-officio members who function under the administrative and financial control of the GOC-in-C of Command. The term of the elected members of the cantonment boards is five years. There are 62 cantonments in the country and all have their elected boards. Elections to them were held during 1985, 1986 and 1987.

Cantonments are classified as Class I, II and III depending on civil population in each case. Of the 62 cantonments, 30 are Class I, 19 are Class II and 13 are Class III. With the prior approval of the Government, cantonment boards are empowered to impose such taxes within their areas as are being levied by the neighbouring municipalities. However, if the boards fail to realise enough revenue to balance their budgets, they are to be assisted by grants-in-aid by the Government. In addition, Government has started paying service charge for maintenance of Government buildings from 1984-85 and it is being ensured that most of this amount is spent on development.

Under the Act, the Government is empowered to review any decision of the cantonment board or of the GOC-in-C in matters pertaining to the administration of the cantonment. Government could also issue directions to the board to improve its financial position by imposing new taxes and increasing the existing ones.

5 Education

EDUCATION has been accorded a high priority as an integral part of country's development process. Due to concerted efforts during the last 42 years a four-fold increase has been registered in the total number of literates. With the increase of more than four times in the number of pupils in the primary schools, the number of such schools has also more than doubled. The number of universities has also gone up by more than five times. Together with the quantitative expansion of educational facilities, there is now a greater emphasis on qualitative improvement. Before 1976, education was exclusively the responsibility of the states, the Central Government being concerned with certain areas like coordination and determination of standards in technical and higher education, etc. In 1976, through a Constitutional amendment, education became the joint responsibility of the Centre and the states.

During the Seventh Plan, the main thrust of educational activities is towards promotion of quality and excellence, gearing the system to meet the challenges of emerging areas of science and technology, providing wider opportunities for vocational education at different levels and restructuring it to encompass the development of the country's human resources potential.

Determined efforts will be made to acheive the goal of universal elementary education and eradication of illiteracy in the age-group 15-35 by 1995. Detailed block and school level planning with community participation and effective linkages with the local environment and development activities is envisaged as a major strategy to overcome the several obstacles associated with achieving the goal of universal elementary education and eradication of illiteracy. A programme named "Operation Blackboard" is being implemented to provide the basic amenities in education in primary schools. An important focus of the Seventh Plan is to raise the quality and relevance of education. In particular, efforts would be made to raise the standards of science and mathematics teaching at all levels. Non-formal education and open learning systems are being encouraged at all levels. Education of scheduled castes and tribes and people of hill areas is being specially promoted. Women's education, which is an area of special importance, will be similarly promoted. Necessary reforms will be initiated to make vocational education more attractive and prestigious. Degrees will not be insisted upon as an essential qualification or pre-condition for jobs where it has no specific relevance.

EDUCATIONAL MANAGEMENT/PLANNING

Besides policy formulation, the Department of Education shares with the states the responsibility for educational planning. Till the Sixth Plan, education was taken to be a social service rather than an input in the development process. There has been a change in the emphasis beginning with the Sixth Plan, wherein it has been considered to be pivotal in the social and economic development of the country through development of human resources. The National Policy on

Education was approved by Parliament in May 1986. It envisages universalisation of primary education and adult literacy by 1990. In this policy, priority has also been given to the qualitative importance of education specially technical and higher education, vocationalisation of secondary education, development of regional languages, strengthening of monitoring and evaluation machinery for effective implementation of plan programmes, etc. Emphasis has also been laid especially on dynamic and beneficial linkages between education, health, social welfare and employment programmes.

EXPENDITURE

During the Seventh Plan, an outlay of Rs 6,382.65 crore has been approved for education including culture and sports by the Planning Commission for the Centre and states. The anticipated expenditure for the first four years (1985-89) of the Plan is Rs 6,020.52 crore. According to the latest available budget estimates for the year 1986-87, the plan and non-plan budget (Revenue Account) of the Central and the state education departments works out to Rs 8,142.83 crore, forming over 11 per cent of the total budget of the Centre and states. The detailed achievements and targets on education have been given in table 5.1.

LITERACY

According to the 1981 census, the national average literacy rate, which was 16.67 per cent in 1951, has increased to 36.23 per cent. Eighteen states and union territories are above the national average. According to the 1971 census, the highest literacy rate of 61.56 was in the Union Territory of Chandigarh and the lowest literacy rate of 11.29 was in Arunachal Pradesh. In 1981, Kerala improved its earlier position of number two in the ranking of literacy rate and attained the highest position with a literacy rate of 70.42 per cent, while the lowest literacy rate of 20.79 continues to be in Arunachal Pradesh. The total number of literates increased from 601.9 lakh in 1951 to 2,475.5 lakh in 1981 (including the estimated literate population of Assam), a four-fold increase in 30 years. Simulataneously, the total number of illiterates had increased from 3,009 lakh in 1951 to 4,376.3 lakh (including the estimated illiterate population of Assam) in 1981. Of these, 3,695.2 lakh (84.44 per cent) live in rural areas. The literacy rate among men is 46.89 per cent against the female literacy rate of 24.82 per cent. Of the total of 444 districts in the country, 243 had a literacy level below the national average, (inclusive of 193 districts where the female literacy rate was below 20 per cent).

ELEMENTARY EDUCATION

The highest priority has been given to the programme of universalisation of elementary education for fulfilment of the Constitutional directive of providing universal, free and compulsory education to all children up to the age of 14. The National Policy on Education resolved that all children who attain the age of 11

TABLE 5.1 ACHIEVEMENTS AT DIFFERENT LEVELS OF EDUCATION

	1950-51	1960-61	1968-69	1978-79	1979-80	1982-83	1984-85	1985-86	1986-87
1. No. of pupils in Classes I-V (lakh)	191.5	349.9	543.7	689.6	715.58	795.07	839.0	864.6	899.9
2. Per centage thereof to total population in age group 6-11	42.6	62.4	78.1	81.6	82.7	86.8	94.1	93.09	95.96
3. No. of pupils in classes VI-VIII (lakh)	31.2	67.0	125.4	181.8	192.79	236.31	257.0	281.2	287.8
4. Per centage thereof to total population in age group 11-14	12.7	22.5	33.5	38.0	39.6	45.5	49.8	52.01	53.14
5. No of pupils in classes IX-XI/XII (lakh)	12.2	28.9	61.5	84.1	98.14	115.88	160.7	151.1	155.0
6. Per centage thereof to total population in age group 14-17	5.3	1.06	18.3	18.8	21.9	18.6	32.4	NA	NA
7. No of pupils at the university stage arts, science and commerce (lakh)	3.6	8.9	17.0	38.2	31.38	49.34	28.9	30.4	32.1
8. Per centage thereof to total population in age group 17-23	0.8	1.8	3.3	4.9	3.7	6.1	NA	NA	NA
9. Per centage of students reading science at university stage	37.8	28.9	23.0	18.0	23.03	23.35	21.9	21.5	21.1
10. No. of primary/junior basic schools	2,09,671	3,30,399	4,00,621	4,72,519	82,476	5,111,06	5,19,701	5,28,079	5,37,399
11. No. of middle/senior basic schools	13,590	49,663	84,246	1,12,801	15,117	1,25,446	1,29,879	1,34,074	1,37,196
12. No. of high/higher secondary schools	7,288	17,257	33,487	46,874	48,905	52,716	58,834	61,314	64,240
13. No. of teachers training schools	782	1,138	231	118	138	111	923	966	973
14 No. of teachers training colleges	53	478	1,377	1,286	1,283	1,310	367	450	462
15. No. of arts, science (including research) and commerce colleges	542	1,122	2,141	6,343	6,514	7,350	8,114	9,102	8,856
16. No. of universities	27	45	92	125	128	141	150^2	150^2	157^2
17. No. of teachers in primary schools	5,37,918	7,41,515	10,05,282	12,96,639	13,28,700	14,23,639	14,58,140	15,09,910	15,22,108
18. Per centage of trained teachers in primary schools	58.8	64.1	76.9	87.1	86.8	86.9	88.7	89.70	87.26
19 No. of teachers in middle schools	85,496	3,45,228	5,95,733	8,25,126	8,35,608	8,82,506	9,05,207	9,67,988	9,79,073
20. Per centage of trained teachers in middle schools	53.3	66.5	81.0	87.4	88.7	89.7	90.6	90.34	89.64

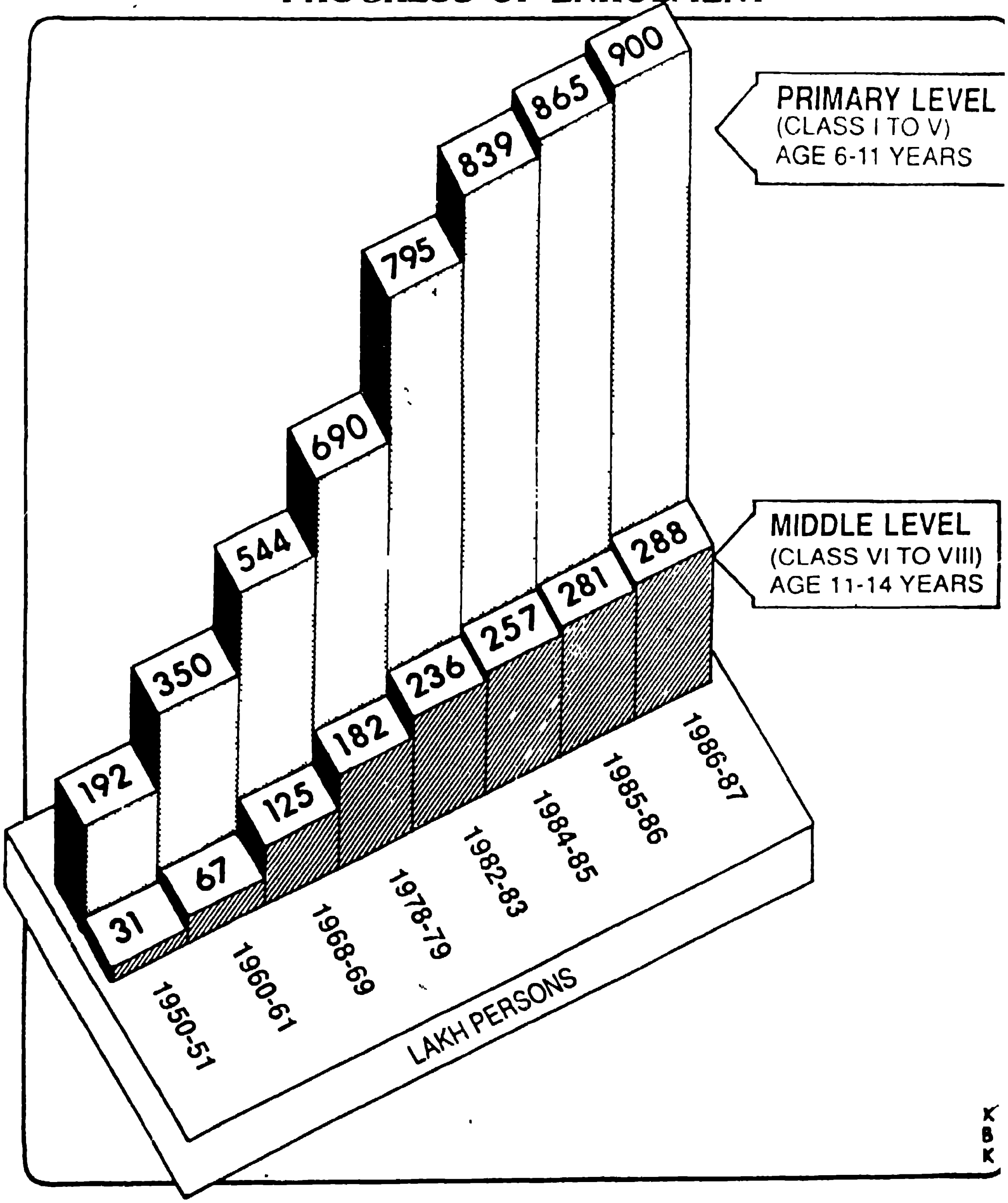
Table 5.1 (Continued)

	1950-51	1960-61	1968-69	1978-79	1979-80	1982-83	1984-85	1985-86	1986-87[1]
21. No. of teachers in high/higher secondary schools	1,26,504	2,96,305	5,81,618	8,18,507	8,69,842	9,93,093	10,75,487	11,58,745	11,99,367
22. No. of teachers in university, arts and science colleges.	18,648	41,759	91,069	2,49,399	2,59,745	3,07,242	NA	NA	NA

1. Figures are provisional and include below degree level institutions also
2. Includes deemed to be university and institutions of national importance.
3. NA stands for not available

ELEMENTARY EDUCATION IN INDIA

PROGRESS OF ENROLMENT



years by 1990 will have had five years of schooling or its equivalent through the non-formal stream. Likewise, by 1995, all children will be provided free and compulsory education up to 14 years of age. The department started several Centrally-sponsored schemes in the elementary education sector to supplement the efforts of the states to achieve the target. Operation Blackboard was started to provide every primary school in the country with an acceptable level of physical facilities, and NFE programme to give education comparable to that of schools on a part-time basis to children who can not join the formal system, working children, school drop-outs, etc. Table 5.2 shows the enrolment achievements in 1985-86 and target for 1986-87.

TABLE 5.2 ENROLMENT ACHIEVEMENTS AND TARGETS

(FIGURES IN LAKH)

	Achievements	
	1985-86	1986-87
Age group 6-11 Enrolment (Classes I-V)	891.26	900.00
Enrolment as per cent of age group population	(95.36)	(96.0)
Age group 11-14 Enrolment (Classes VI-VIII)	289.97	288
Enrolment as per cent of age group population	(55.63)	(53.14)
Age group 6-14 Enrolment (Class I-VIII)	1,181.23	1,243.99
Enrolment as per cent of age group population	(81.14)	(85.08)

Presently, education in class I-VIII in all government/local body and aided schools in most of the states/union territories in the country is free.

NAVODAYA VIDYALAYAS

It is universally recognised that children with special talent or aptitude should be provided opportunities to proceed at a faster pace. The National Policy on Education envisaged that pace setting schools intended to serve this purpose should be set up in various parts of the country on a given pattern with full scope for innovation and experimentation. Accordingly, a scheme was formulated under which it was decided to set up co-educational residential schools, called *Novodaya Vidyalayas*, on an average one in each district, during the Seventh Plan.

The main objectives of the Navodaya Vidyalayas are: (a) to provide good quality modern education with latest technical facilities for alround development of the talented children without any regard to their family's socio-economic conditions, (b) to ensure reasonable competence in three languages as envisaged in the three-language formula; and (c) to serve as focal points for improvement in quality of school education in general through sharing of experiences and facilities.

The Navodaya Vidyalayas are run by the *Navodaya Vidyalaya Samiti*, which is an autonomous society under the Ministry of Human Resource Development. The Samiti was registered as a society on 28 February 1986 and is affiliated to the Central Board of Secondary Education.

During the Seventh Plan, 449 Navodaya Vidyalayas are expected to be set up. So far, 256 Vidyalayas have been set up in 29 states/union territories. In addition, 47 more Vidyalayas have been sanctioned to be started during the academic year 1988-89. The total number of children admitted during the academic session 1988-89 was 13,804 including 2,506 girls. The representation of SC and ST and girls works out to 28 per cent, 11 per cent and 18 per cent respectively.

SECONDARY EDUCATION

Education is free up to lower secondary (up to Class X) stage in 16 states and five union territories, namely, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Goa, Gujarat, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Mizoram, Nagaland, Sikkim, Tamil Nadu, Tripura, West Bengal, the Andaman and Nicobar Islands, Dadra and Nagar Haveli, Daman and Diu, Lakshdweep and Pondicherry. Besides, it is also free for girls in Manipur, Orissa, Rajasthan and Uttar Pradesh. Children belonging to scheduled castes and tribes get free education in all states and union territories up to Class X.

Education up to the higher secondary stage (Class XI-XII) is free in Gujarat, Jammu and Kashmir, Himachal Pradesh, Tripura, West Bengal, Sikkim and in the union territories of Arunachal Pradesh, the Andaman and Nicobar Islands, Dadra and Nagar Haveli and Pondicherry. The Central Government is reimbursing the tuition fees charged from girls in classes IX to XII in government aided/local body schools, to state governments and union territories from 1985-86.

10+2+3 PATTERN

The adoption of the 10+2+3 pattern was first recommended by the Calcutta University Commission (1917-19). The proposal was also endorsed by the Central Advisory Board of Education. It was made part of the National Policy on Education in the policy resolution of 1986. Apart from a uniform structure, the pattern provides for changing the content of education to suit national needs. The system makes vocationalisation of the higher secondary stage easier and more effective. Above all, the system helps in raising standards both at the school and the university stages. All the states/union territories have switched over to 10+2 pattern of education.

UNIVERSITY AND HIGHER EDUCATION

Higher education is imparted through 136 universities and a large number of arts, science, commerce and professional colleges affiliated to them. Six more universities were established in 1988-89. Besides, there were 20 institutes in several specialised fields which are deemed to be universities under the University Grants Commission Act, 1956, as on 1 April 1987. Ten institutions have been declared by Parliament to be institutions of national importance.

UNIVERSITY GRANTS COMMISSION

The University Grants Commission, set up in 1953, promotes and coordinates university education and determines and maintains standards of teaching, examination and research in the universities. It has the authority to enquire into the financial needs of the universities and to make appropriate grants to different universities. It advises on the establishment of new universities and other matters pertaining to higher education.

NATIONAL PROFESSORSHIP

The Government instituted in 1949 a system of National Professorships to honour distinguished academicians and scholars in recognition of their valuable contribution to knowledge. Persons of real eminence who have attained the age of 65 and who have made outstanding contribution in their respective fields and are still capable of further productive research, are considered for appointment as national research professors. The appointment is made initially for a period of five years which is extendable by another five years.

National Professors (the disciplines and the years of appointment are given in the brackets) appointed since the inception of the scheme are: Dr C.V. Raman (1888-1970, Physics 1949), Dr Satyendra Nath Bose (1894-1974, Physics, 1958), Dr Radha Binod Pal (1886-1967, Jurisprudence, 1959), Dr Pandurang Vaman Kane (1880-1971, Indology, 1959), Dr Sisir Kumar Mitra (1890-1963, Physics, 1962), Dr Darashaw Nosherwan Wadia (1883-1969, Geology, 1962), Dr Vasant Ranjit Khanolkar (1895-1978, Medicine, 1963), Dr Suniti Kumar Chatterjee (1890-1977, Humanities, 1965), Dr Shiyali Ramamrita Ranganathan (1892-1972, Library, Science, 1965), Dr Salim Moizuddin Abdul Ali (1896-1987, Ornithology, 1982), Dr Telliyavaram Mahadevan Ponnabalam Mahadevan (b-1911, Philosophy, 1982), Dr Vijayendra Kasturi Ranga Vardaraja Rao (b-1908, Economics, 1984) and Dr Durga Das Basu (b-1909, Constitutional Law, 1986).

TECHNICAL EDUCATION

Trained manpower at the middle level is needed for a wide range of professional duties. For this purpose, diploma courses are offered in about 400 approved polytechnics, with an annual enrolment capacity of about 70,000 students. They offer a variety of courses in engineering and technology. In addition, there are other institutions which conduct courses at diploma level like pharmacy, hotel management, etc. There are 42 more approved polytechnics which are meant exclusively for girls. They are admitting about 5,200 girls per year. The polytechnics not yet approved by the All India Council for Technical

Education/Government of India have been excluded from the figures given on pre-page.

The polytechnics are widely spread all over the states and union territories. They are affiliated to the respective state board of technical education, which lay down the levels and standards of the courses and are responsible for the evaluation of the polytechnics and students. The courses are normally of three years' duration, where full-time institutional instruction is offered and 3½ to 4 years where instruction is on a sandwich pattern or on part-time basis. The vocational training/craftsmen courses are offered at the industrial training institutes. For the professional engineers and technologists, 200 approved engineering colleges offer courses leading to bachelor's degree of the respective university. The total admission capacity annually for these courses is about 35,000. The number of institutions offering post-graduate courses is about 105 with annual capacity of about 6,500. Facilities also exist at most of the centres for part-time courses at the post-graduate level for those who are already in service. The duration of a full-time post-graduate course in engineering and technology is of three semesters.

Five national institutions at Bombay, Kanpur, Kharagpur, Madras and New Delhi, known as Indian Institutes of Technology, provide facilities for undergraduate and post-graduate courses as well as for research in engineering and technology. These institutions admit about 1,600 students annually to undergraduate courses. Besides, these institutions along with the Indian Institute of Science, Bangalore, admit nearly 2,000 students every year to the post-graduate courses and 1,500 research scholars. There are 17 regional engineering colleges providing facilities for education in various branches of engineering and technology. For specialised courses such as mining and metallurgy, industrial engineering, forge and foundry and architecture, a number of centres have been established. To integrate engineering education with practical training, a number of engineering colleges and polytechnics are now offering sandwich courses in collaboration with industry. The duration of such courses for degree in engineering is 4½-5 years and for diploma 3½-4 years. There are four technical teachers' training institutions located at Calcutta, Bhopal, Chandigarh and Madras to train teachers needed for polytechnics.

The four national level institutes at Ahmadabad, Calcutta, Bangalore and Lucknow provide assistance to private and public sector enterprises in meeting their needs for managerial manpower through their post-graduate programmes. At present the annual student enrolment capacity of these institutions is about 500. They also provide assistance in solving management problems and contribute to the development of indigenous literature on the science of management through organising programmes of research, consultancy and publication and also conduct fellowship programmes which are equivalent to Ph D. In addition, there are about 55 institutions in the university sector-professional bodies and voluntary organisations—offering full-time, part-time, as well as correspondence courses in general and in functional areas in the field of management. There is a scheme of community polytechnic at selected diploma level institutions all over the country to promote community/rural development on scientific lines through transfer of technology to rural areas.

TEACHER EDUCATION

In view of the teacher's crucial role in improving the quality and coverage of education, the new Education Policy attaches very high importance to pre-service as well as in-service components of teacher education.

A programme of mass orientation of school teachers is being implemented by the Government of India since 1986. Under it, 10-day camps are organised throughout the country, mostly during vacations, with a view to orienting school teachers in the priorities of the new policy, and to improve their professional competence. About 4.42 lakh and 4.38 lakh school teachers were covered under the programme during 1986 and 1987, respectively. The 1988 round is also over (September 1988) and roughly another five lakh school teachers are expected to have been covered. The programme would continue during 1989 as well.

As envisaged in the new policy, a Centrally-sponsored programme of setting up district institutes of education and training (DIET) and of strengthening secondary teacher education institutions (STEI) is also being implemented since 1987-88. These institutions will perform the functions of imparting pre-service and in-service training to elementary school teachers and personnel of adult and non-formal education. Besides, they will provide extension and other academic support to elementary schools and adult and non-formal education systems at the district level and would also engage in locally-relevant experimentation and innovation work. Like-wise, selected STEIs are also being developed to impart pre-service as well as in-service training to secondary school teachers, and to provide necessary academic guidance and support to the secondary schools of a group of two or three districts.

Central assistance is being given to states and union territories for setting up DIETs and strengthening STEIs, for items such as construction of buildings, books and equipment, appointment of suitably qualified staff, conducting in-service training programmes, etc. During 1987-88, the Central assistance of about Rs 32.5 crore was released for setting up 102 DIETs, and for strengthening 15 STEIs, on projects basis, in the country. The states are now in the process of implementing these projects with the released assistance. During the rest of the Seventh Plan, the Central assistance would be given for more such projects, and eventually all districts of the country would be covered.

ADULT EDUCATION

In accordance with the directives of National Policy on Education, and the implementation strategies envisaged in the Programme of Action, the Government has formulated a comprehensive programme known as National Literacy Mission (NLM) in the field of adult education. It is one of the six

National Technology Missions. The objective is to impart functional literacy to 800 lakh illiterates in the 15-35 age group—300 lakh by 1990 and an additional 500 lakh by 1995. At present, there are 513 projects in operation in various states and union territories.

Voluntary agencies are playing an important role in the adult education programme. There are presently 500 voluntary agencies working in the field. In addition *shramik vidyapeeths* and 16 state resource centres are functioning in different states to cater to workers' education and to provide technical resource support to the programme.

Launched in 1986, the Mass Programme of Functional Literacy covered over 4.20 lakh learners. During 1987, a still ambitious programme was adopted, involving both students and teachers of schools and colleges with inputs for research studies on the success of the programme. The programme has been designed keeping in view the needs and language of the learners. The government has selected 40 districts with techno-pedagogic and research and development inputs to improve the quality of adult education. A computerised management information system is being instituted to ensure reliable and steady flow of information needed for improvement in management of the programme at all levels. It is only after evaluation of the impact that the programme will be taken up in a big way to spread literacy in the minimum possible time.

WOMEN'S EDUCATION

In recognition of the importance of education of girls and women in accelerating socio-economic development, the Government has formulated a variety of measures from time to time in this direction. The National Policy on Education envisages that education would be used as a strategy for achieving a basic change in the status of women. The national education system would: (i) play a positive interventionist role in the empowerment of women; (ii) contribute towards development of new values through redesigned curricula and textbook; and (iii) promote women's studies as part of various courses. The main features of the targets and implementation strategy will be: (i) to gear up entire education system to plan a positive interventionist role in the empowerment of women; (ii) to promote women's studies as a part of various courses and encouragement to educational institutions to take up active programmes to further women's development; (iii) to widen the access of women in programmes of vocational, technical and professional education; and (iv) to create dynamic managerial structure to cope up with targets envisaged.

The Government has also introduced a scheme for reimbursement of tuition fee to girls in classes IX-XII in government/ government aided/ local body schools in the states/union territories. The scheme is effective from 1985-86 and will continue during the Seventh Plan. During 1986-87, a sum of Rs 1,361.05 lakh was given to the states/union territories under this programme.

MAHILA SAMAKHYA

A Central scheme 'Mahila Samakhya' (Education for Women's Equality) is being launched in Uttar Pradesh, Gujarat and Karnataka. Essentially, the programme contemplates setting up of women's activity centres in the villages. Adult education centres, non-formal education centres and *jana shikshan nilayam* and intensive training of all education workers in the villages will be coordinated in this programme through a single implementation structure. The Mahila Sangha will motivate women to participate in the education process. In addition, vocational training for rural women, residential condensed courses for rural women to upgrade their educational skills and vocational training in unconventional fields in selected high schools will be taken up under the programme. It tries to initiate an integrated intensive approach to women's education, taking into consideration the constraints under which women have to live. Training as a regular activity on all levels will be initiated, so that old attitude towards women will change and women will move from a state of passive acceptance of the reality to active self-determination of their life situation. This programme has been initially taken up for two years and depending on availability of funds, will be extended to the Eighth Plan period.

TECHNICAL AND MANAGEMENT EDUCATION

The National Policy on Education has emphasised the reorganisation of technical and management education system in the light of the anticipated scenario by the turn of the century. Induction of improved technologies and supply of technical and managerial manpower to the infrastructure and services sectors as well as the unorganised and rural sectors are the main features. Besides, promotion of continuing education and distance learning, computerisation, entrepreneurship as a career option is also highlighted. Strengthening of community polytechnic system to increase its quality and coverage, innovation, research and development, promoting efficiency and effectiveness at all levels and vesting the All India Council for Technical Education with statutory authority for planning, formulation and maintenance of norms and standards also receives the same importance.

NATIONAL LITERACY MISSION

The mass programme for National Literacy Mission (NLM) was launched as a measure of better environment building and ensuring people's participation. Twenty states/union territories have launched similar campaigns. Rural Functional Literacy Project pattern has been reviewed and reorganised and detailed guidelines issued to 24 states, union territories for implementation of the revised pattern and for extending it to the state adult education projects The Directorate of Adult Education, New Delhi, has brought out a training manual captioned 'Learning for Participation' embodying the new philosophy of training under NLM.

EDUCATIONAL TECHNOLOGY

An educational technology programme was started in the Central sector in 1972 during the Fourth Plan. It aims at deploying the resources of educational technology for bringing about a qualitative improvement in education, widening access to education and reducing existing disparities between different regions of the country as well as different sections of the population. Under the scheme educational technology cells in 21 states and a centre for educational technology in National Council of Educational Research and Training have been set up.

In the context of the availability of the television facilities of INSAT, the Ministry of Information and Broadcasting suggested that the user ministries should take active part in the production of programmes meant for their specific uses. This would ensure that the programmes are relevant, meaningful and effective. It was thus necessary to create production capabilities at a decentralised level. The Ministry of Education decided that the responsibility for the production of educational television programmes would be gradually taken over by the educational authorities from Doordarshan.

In order to implement this decision, it was necessary to set up programme production centres in the INSAT states in a phased manner. Accordingly, State Institutes of Educational Technology (SIET) are being established in each of the six INSAT states, namely, Andhra Pradesh, Orissa, Gujarat, Maharashtra, Uttar Pradesh and Bihar, for promoting production of educational television programmes (ETV) on a decentralised basis. The non-INSAT states and union territories are being prepared for participation in the INSAT programme through an educational technology scheme under which limited production capabilities are being created to enable the states and union territories to experiment in production of programmes and organise training courses. At the national level the Central Institute of Educational Technology (CIET) was set up in the National Council of Educational Research and Training by merging the existing Centre for Educational Technology and Department of Teaching Aids.

The major priorities identified for educational programmes, particularly in relation to the use of radio and television facilities for educational purposes, are (a) universalisation of elementary education, both formal and non-formal; (b) non-formal education for adults, linking education to economic and social tasks; (c) development of vocational and professional skills; (d) training for citizenship; (e) popularising science with a view to developing a scientific outlook; (f) promoting national integration; and (g) providing information about themes of national importance—population education, energy conservation, preservation of wildlife, environmental sanitation, nutrition and health.

Keeping in view the large requirements for teacher education, the mass media will be used to broaden the horizon of teachers; to provide help in formal school teaching; and to assist in apreciation of the objectives of the educational uses of television and radio to ensure better utilisation. The state production centres will be responsible for the production of television programmes of acceptable professional quality and educational utility. To begin with, the programmes would be limited to elementary education, non-formal education and teachers' training. Once the production centres become fully operational they will cater to the programme requirement of all levels of education.

Till such time as the state production centres become operational, the CIET is producing programmes which are being telecast in six states. The production of ETV programmes for the INSAT states was hitherto shared between Doordarshan and CIET on 50:50 basis. However, from May 1987, the responsibility has been taken entirely by CIET. The CIET has also produced capsules for mass orientation of teachers during the summer vacations. Two programmes are being telecast daily in the regional languages, five days a week, for school children in the age group 5-11 during the normal working hours of the schools. On Saturdays there is a programme for teachers. In view of the limited production facilities available, CIET is presently producing programmes in Hindi or English and dubbing them into regional languages of the states concerned. Production of programmes (and dubbing of CIET programmes) has been taken up by SIET in Gujarat and Maharashtra. Andhra Pradesh, Bihar and Uttar Pradesh have also started some programme production. The responsibility for radio transmission still rests with AIR.

EDUCATIONAL RESEARCH AND TRAINING

The National Council of Educational Research and Training (NCERT), was established in 1961 in New Delhi. It acts as the principal agency for academic advice to the Ministry of Human Resource Development in matters pertaining to the formulation and implementation of policies and programmes for the qualitative improvement of school education. It works in close collaboration with the education departments of the states, universities and other institutions having an interest in school education. It also maintains close contact with international organisations.

The NCERT undertakes research and innovations, development activities, training programmes, educational extension, publications and dissemination, education evaluation, talent search and nurturing and exchange programmes. It runs the National Institution of Education (NIE), New Delhi. The NIE works towards the renewal of content and process of school education. The Central Institute of Educational Technology (CIET), New Delhi, promotes the use of educational technology, particularly mass media, in the improvement and spread of education in the country and for the development of alternate system of education. The four regional colleges of education in Ajmer, Bhopal, Bhubaneshwar and Mysore impart training courses at graduation and post-graduation level in education. The methodologies developed in these colleges are tested in actual classroom situations.

There are 17 field advisers of NCERT in Ahmadabad, Allahabad, Bangalore, Bhopal, Bhubaneshwar, Calcutta, Chandigarh, Guwahati, Hyderabad, Jaipur, Madras, Patna, Shillong, Pune, Shimla, Srinagar and Trivandrum. The field advisers provide effective liaison with the state education authorities and state level institutions for providing academic and training inputs to the school education system.

The NCERT develops instructional materials for early childhood education and training packages for teacher educators and supervisory personnel; activity sheets are evolved for the children. It develops picture books, audios, videos, etc., and orientation programmes are conducted for the key persons. Toy making competitions are also organised by it. It also develops non-formal education curriculum; modular instructional materials; and training manuals for NFE functionaries. The NCERT provides technical assistance for the National Population Education Project designed to introduce population education in the formal education system. The programme has been developed in collaboration with the United Nations Fund for Population Activities and with the active involvement of the Ministry of Health and Family Welfare. It undertakes design, development and prototype of science equipment for schools and conducts teacher training programmes on science equipment. The expertise of NCERT in this field is also made available to the states/ union territories. The NCERT also takes up preparation of design of courses and materials, generation of software systems, setting up of resource centres for the computer literacy and studies in schools (CLASS) project.

Orientation courses for key persons involved in vocational education from states and union territories are organised by the NCERT. It prepares comphrehensive guidelines for curriculum evaluation and school-industry linkages as well as for pre-service and in-service education of teachers taking up vocationalisation of education. It also conducts training courses for the officials involved in the integrated education programme for disabled children. Facilities for such training are available in the regional colleges of education. Development of instructional material for the formal and non-formal education of scheduled castes and tribes is also made by it.

The council awards 750 scholarships yearly to students on the basis of a national talent search examination conducted at the end of class X. The successful candidates are awarded scholarships to pursue studies up to Ph D level in science, mathematics, social sciences or professional courses in areas of engineering and medicine.

The policy research planning and programming under the Educational Research and Innovations Committee (ERIC) is concerned with identification of priority areas in research to sanction funds for research projects by CIET, NIE, RECs and other institutions in the states and also individual scholars. The ERIC also offers fellowships for doctoral work under the co-guidance of the NCERT faculty and publication grants for doctoral thesis, research papers and monographs. NCERT thus undertakes, aids, promotes and coordinates research and innovations in all branches of education and acts as a clearing house for ideas and information on research.

The publications and documentation of NCERT consist of over 280 textbooks, instructional materials and supplementary readers for classes I to XII. Other journals published by the NCERT are *Indian Educational Review, Journal of Indian Education, School Science Primary Teacher, Primary Shikshak* and *Bharatiya Adhunik Shiksha.* The International Educational Resource and Documentation Centre collects and disseminates information and reading materials on comparative international aspects of education.

SCHOLARSHIPS

The Department administers a number of scholarship programmes including those offered by other countries providing facilities for higher and specialised education and training to Indian students. It also provides scholarships to nationals of other countries on a bilateral basis or otherwise. The national scholarship scheme started in 1961-62 on merit-cum-means basis is being implemented through the states and union territories. For 1988-89, the number of scholarships given is 33,000. Since 1987-88, the number of scholarships has been raised to 40,000. The annual income ceiling for eligibility has also been raised from Rs 6,000 p.a. to Rs 25,000 from April 1988. The national loan scholarship scheme is in operation since 1963-64. This is also implemented through the states and union territories. The number of fresh scholarships is 20,000 per annum. Again the annual income ceiling has been raised from Rs. 6,000 p.a. to Rs 25,000 from April 1988. A scheme of scholarships in approved residential secondary schools was started in 1953-54 and is being administered directly. Five hundred scholarships are awarded every year to students of the age group 11-12 whose parental income does not exceed Rs 25,000 per annum. The scheme of scholarships to students from non-Hindi states for post-matric studies in Hindi, operative since 1955-56, is being implemented through non-Hindi speaking states and union territories. Since 1979-80, every year 2,500 scholarships are given under the scheme.

The scheme for upgradation of merit of SC/ST students was started in 1987-88. The objective of the scheme is to upgrade the merit of SC/ST students by providing them extra coaching, both remedial and special, with a view to removing their educational deficiencies in school subjects and by facilitating their admission in professional courses, where entry is based on competitive examinations. The SC/ST students who are selected under the scheme are placed in good residential schools so that they receive better quality education, develop confidence and are in a position to interact with other students. The scheme is being operated through states and union territories. The scheme was started in 1987-88 with 225 students in 12 schools in four states. During 1988-89, 1,000 awards have been allocated all over India.

Under general cultural scholarship scheme, started in 1949-50, the Government awards a certain number of scholarships each year to nationals of selected African, Asian and other developing countries for graduate, post-graduate courses in engineering, technology, management, medicine pharmacy and general courses against reserved seats in Indian institutions and universities.

Scholarships are tenable for the period necessary for the students to acquire the degree, diploma or certificate course for which they are selected. The scheme has been evolved to promote friendly relations between India and foreign countries and to provide all such facilities for higher education and training which is not available in their respective countries. Applications are invited through Indian missions abroad from the selected countries and only those students are considered who are recommended by their countries through Indian missions. Under self-financing scheme the self-supporting foreign students are also considered for admission to B Pharmacy course against reserved seats in Indian institutions.

One hundred and ten scholarships/fellowships (including 10 for Sanskrit and Pali) are awarded every year to the nationals of Bangladesh. The government is also offering scholarships to nationals of Sri Lanka (50), Mauritius (30), Maldives (16) and Angola (40), for higher studies in India. These schemes are financed by the Ministry of External Affairs and administered by the Department of Education. The value of scholarships remains the same as in the case of general cultural scholarship scheme.

Scholarships at the secondary stage for talented children from rural areas are being administered through the states and union territories. The aim is to develop the potential talent from rural areas and educate them in good neighbourhood district schools. Under the scheme, the scholarships begin at the middle stage and cease at the end of secondary stage including plus-two stage of education. In this category, 33,000 scholarships have been allocated for 1985-86. During 1988-89, this number was 38,000. The scheme of scholarships for study abroad, operating since 1971-72, is being administered directly. Scholarships are available in all fields except medical and agricultural studies. Fifty scholarships are awarded each year. About 500 scholarships/fellowships are offered to the foreign students annually under the cultural exchange programme and commonwealth scholarship/fellowship plan and other schemes. During 1987-88, about 275 scholars joined different universities/institutions and were awarded scholarship under these schemes. Scholarships are awarded normally for a period of two years, depending on the duration of the course. The scholarships are mainly for post-graduate studies/research.

The objective of providing scholarships for Indian students to study abroad is to provide facilities for higher education in foreign countries in subjects for which good facilities are not available in India. Scholarships are offered under the provisions of cultural exchange programmes, bilateral agreements, Commonwealth scholarship/fellowship plan and *ad-hoc* scholarships are offered by different countries from time to time. The subjects in which they are offered are not fixed and they are determined according to the national requirements. They are mostly for Ph D and post-Ph D specialisation for which the minimum eligibility requirement is a first class master's degree. During 1987-88, 59 candidates went to UK/Canada, 33 to Italy, 21 to USSR and 51 to other countries mainly for Ph D and post-doctoral research.

BOOKS

NATIONAL BOOK TRUST

The National Book Trust, an autonomous organisation set up in 1957, functions with the objectives of fostering bookmindedness among the people and producing good reading material for various age groups at moderate prices. In pursuance of these objectives, the trust has been producing books in Indian languages and in English in well-defined series. Some of the important series are: *India—the Land and the People, National Biography, Young India, Folklore of India, Popular Science* and *World of Today.* Since its inception, the trust has brought out 3,247 titles under these series. Besides, the trust has two major publishing programmes for national integration, namely, *Aadan Pradan* and *Nehru Bal Pustkalaya* series. More than 654 books have been published in *Aadan Pradan* series and about 1,248 titles in *Nehru Bal Pustakalaya.*

The trust organises book fairs and festivals at international, national and regional levels. It has so far organised seven world book fairs, all in New Delhi; 13 national book fairs; nine regional book festivals and about 120 regional book exhibitions. The 13th National Book Fair was held in Trivandrum in January 1987. The ninth New Delhi World Fair will be held from 2 to 12 February 1990.

To encourage indigenous authorship, the Trust is operating a scheme of subsidised publication of university level books written by Indian authors with a view to making these avaialble to the students at reasonable prices.

EXPORT OF BOOKS

India is one of the ten major book producing countries of the world and ranks third in production of English titles. To promote sale of Indian books and translation rights abroad, and for securing printing jobs from abroad, steps are being taken to publish books through participation in international book fairs and organisation of special exhibitions of Indian books, by conducting market studies and commercial publicities through circulation of annotated catalogues, brochures, etc. During 1986-87, India exported books, including periodicals and journals worth Rs 26 crore.

IMPORT OF BOOKS

Import of educational, scientific and technical books and journals, news magazines and newspapers are allowed under open general license (OGL). Dealers with a turnover of books valued at Rs 3 lakh or more are eligible to apply for import license on the basis of 10 per cent of their purchase turnover for the import of books other than those covered by OGL.

NATIONAL EDUCATIONAL RESOURCES CENTRE

The Raja Rammohun Roy National Educational Resources Centre was established in 1972 as a part of the Book Promotion Division with the main objective of promoting writing and production of indigenous university level books. It aims at serving authors and publishers of university level books as well as research workers in the field of book production by way of intensive and extensive reference work and documentation services, and through its various book promotional activities, *viz.*, organisation of exhibitions of university level books in various universities by rotation, providing free publicity to indigenous university level publications and creating awareness among the teachers and students about the presence of standard university level books, on-the-spot evaluation of indigenous university level books by panels of subject experts for possible recommendations to universities, conducting sample surveys, documentation and statistical analysis of imported books with a view to ascertaining the patterns or trends of book imports in order to formulate a meaningful import policy of reading material. It is the sole agency bringing out a national catalogue of university level books, the first of its kind in India. The centre acts as a data bank for university level textbooks and also as a Textbook Research-cum-Information Centre. It has a large number of indigenous university level books as well as subsidised editions of books published under the Indo-British, Indo-Soviet and Indo-American text-book collaboration programmes. Besides, it brings out bibliographies, newsletters, etc., on various topics of interest to meet the demands of authors, research scholars and publishers.

The centre has been designated as the national agency for the operation of International Standard Book Numbering System in India (ISBN). More than 600 publishers have been registered with the agency so far, using ISBN on their publications. The system has been introduced to boost the exports of indigenous books and minimise the procedural delays in the book trade.

COPYRIGHT

Copyright protection is governed by the Indian Copyright Act, 1957. A copyright office has been set up under the provisons of the Act to register works in which copyright exists so that the owners of copyright in such works can have a *prima facie* evidence of their ownership under the Act. A copyright board with powers of adjudication in copyright disputes has also been set up.

India is a member of two international conventions on copyright, namely, the Berne Convention (1948) and the Universal Copyright Convention (1952). Both these conventions were revised at Paris in 1971, whereby special concessions were given to the developing countries to enable them to issue compulsory licenses for reproduction/translation of books of foreign origin for educational purposes. The Indian Copyright Act was amended in 1983 with the specific purposes of (a) incorporating the provisions of the Pairs Text of 1971 of the Berne Convention and the Universal Convention concerning grant of compulsory license for translation and reproduction of foreign works required for educational purposes; (b) providing adequate protection to author's right; and (c) removing administrative drawbacks and other lacunae experienced in the administration of the Copyright Act, 1957. The amended Act came into force from 9 August 1984.

The Copyright Act was further amended in 1984 in order to check the problem of widespread piracy in the country. The Copyright (Amendment) Act, 1984 has been enacted and necessary provisions have been made to combat piracy by making punishment for various offences more stringent. Infringement of copyright has been made a cognizable offence. The Act provides for enhanced punishment for the infringement of copyright, namely, imprisonment up to three years, with a minimum punishment of imprisonment of six months and a fine up to Rs 2 lakh with a minimum of Rs 50,000. The Act came into force from 8 October 1984.

PROMOTION OF LANGUAGES

The policy of the Government is to encourage the development of all Indian languages including classical, modern and tribal. Programmes are undertaken to achieve the desired objectives with the emphasis on training of teachers in relation to the adoption of three-language formula and the production of university level textbooks with a view to media switchover from English to regional languages. Without intending to impose Hindi in any form, support for promotion of facilities for the teaching of Hindi in non-Hindi speaking states is provided and financial assistance is given for the appointment of Hindi teachers in their schools, establishment of Hindi teacher training colleges; award of scholarships to students in these states for the study of Hindi beyond the matriculation stage, assistance to voluntary organisations to enable them to hold Hindi teaching classes; conducting research on the methodology of its teaching and providing Hindi books to various organisations. For promotion and development of tribal, classical and modern Indian languages, a number of schemes for preparation/publication of books, dictionaries, research and instructional material, training of teachers, etc., are being implemented.

HINDI

Through the Kendriya Hindi Sansthan, Agra, the Government promotes the development of improved methodology for teaching Hindi to non-Hindi speaking students, preparation of suitable teaching materials and development of improved teaching methods. Through the Central Hindi Directorate, the Government runs programmes relating to the purchase/publication of Hindi books and their free distribution in non-Hindi speaking states and Indian missions abroad; Hindi teaching correspodence courses through the medium of English, Tamil, Malayalam and Bengali for foreigners and non-Hindi speaking students; preparation/publication of terminology/bilingual/trilingual dictionaries, etc.

The Commission for Scientific and Technical Terminology, New Delhi, has been assigned the task of preparation and publication of definitional dictionaries/terminology in various disciplines, Pan-Indian terminology, Hindi-English glossaries in basic sciences, humanities, social sciences and applied sciences, production of university level books in agriculture, engineering including polytechnic, veterinary sciences, forestry, medical sciences, including nursing and para-medical and pharmaceutical sciences. Grants-in-aid to voluntary organisations working in the field of Hindi in non-Hindi speaking states/union territories and other states/union territories are released for propagation and development of Hindi.

In order to assist non-Hindi speaking states/union territories to effectively implement the three-language formula, financial assistance for appointment of Hindi teachers for upper primary, middle, high and higher secondary schools is also sanctioned. Financial assistance for setting up Hindi teachers' training colleges in non-Hindi speaking states/union territories is being sanctioned under another Centrally-sponsored scheme. The grant-in-aid is provided mainly to assist the consolidation and further development of Hindi teachers' training colleges in non-Hindi speaking states/union territories and to a limited extent, to assist the setting up of a new institution in each of the non-Hindi speaking states/union territories as are in need of such assistance.

There is a provision of 50 scholarships every year to the students of foreign countries for study of Hindi in Central Hindi Institute, New Delhi. In order to provide material in Hindi in foreign countries where there is a sizeable population of Hindi speaking residents, Hindi books are supplied for setting up Hindi libraries in missions abroad. Hindi typewriters and other equipment are also supplied. Hindi scholars are sent abroad for propagation of Hindi under cultural exchange programmes.

MODERN INDIAN LANGUAGES

Under the scheme for development of modern Indian languages, the Government gives financial assistance to voluntlary organisations for bringing out publications like encyclopaedias, dictionaries, books of knowledge and of scientific interest. Grants are given for holding literacy conferences, seminars and exhibitions for development of Indian languages. Assistance is also given by way of purchasing copies of printed publications. The states are given special help for the production of university level books in regional languages.

The Bureau for Promotion of Urdu, a subordinate office in the Department of Education, was set up in 1969. Apart from working as Secretariat to the Taraqqi-e-Urdu Board which advises the Government on the development of Urdu, the Bureau for Promotion of Urdu develops educational literature in Urdu. The bureau has established 31 calligraphy centres, where instruction is given to students in *Kitabat*. Of these, four have been specially set up for women and three for training in decorative calligraphy.

The Government also provides facilities for the study of languages other than the mother tongue. For this purpose, the Central Institute of Indian Languages, Mysore, is charged with the responsibility of conducting research in the areas of language analysis, language pedagogy, language technology and language use. The study of tribal languages is one of its important functions. By now, the institute has taken up 57 tribal and border languages/dialects for linguistic description and material production. The institute supports six regional language centres at Bhubaneshwar, Mysore, Patiala, Pune, Solan and Lucknow to help meet the demand for trained teachers to implement the three-language formula and give assurance to the linguistic minorities.

ENGLISH AND FOREIGN LANGUAGES

The Central Institute of English and Foreign Languages, Hyderabad, was set up in 1958 as an autonomous organisation with the objective of bringing out qualitative improvement in the teaching of English. Subsequently, it expanded the field of its activities to include the teaching of major foreign languages, *viz.*, Russian, German, French and Arabic and their literatures. In 1973, it was declared to be an institution of higher learning deemed to be university under the University Grants Commission Act. It has two regional centres, one at Shillong and the other at Lucknow.

With a view to improving the standard of English language teaching and learning in India, several measures are being taken up. Financial assistance is provided to the states for setting up of district centres for English. These centres aim at imparting training to teachers of English in their areas through orientation courses, followed by long-term professinal support and guidance through correspondence programmes. A scheme of financial assistance to state English language teaching institutions is also envisaged with a view to strengthening their programmes of training.

SANSKRIT AND OTHER CLASSICAL LANGUAGES

There are many schemes for the propagation, popularisation and development of Sanskrit education and also other classical languages like Arabic and Persian. The main activities include financial assistance to voluntary Sanskrit organisations, development of some of the institutions run by voluntary organisations into Adarash Sanskrit Pathshalas with enhanced financial assistance, employment of professors, younger teachers, financial assistance for publication of original writings of contemporary authors, editing and publication of rare manuscripts and catalogues of manuscripts, reprinting of important out-of-print Sanskrit texts, promotion of oral Vedic tradition, vocational training to products of Sanskrit *pathshalas*, national awards to eminent scholars and preparation and publication of Sanskrit dictionaries.

Registered organisations engaged in development and propagation of Sanskrit are given recurring and non-recurring grants for salary of teachers, scholarhips to students, construction and repair of buildings, library books, research projects, etc., to the tune of 75 per cent of the approved expenditure. During 1987-88 about 700 voluntary institutions conducting courses on traditional Sanskrit education have benefitted by this scheme. Institutions having potential for greater development are identified and are brought under the scheme of *Adarsh Sanskrit Pathshalas/Shodh Sansthans.*

Under the scheme of Certificate of Honour to Sanskrit, Arabic and Persian scholars, ten eminent Sanskrit scholars and two each in Arabic and Persian are honoured by the President every year. They are also given a grant of Rs 10,000 per year for their life time. Till 1988, 272 scholars have been awarded this honour.

The Department of Education also conducts an all-India Vedic convention and all-India Sanskrit elocution contest in different parts of the country every year to popularise Sanskrit, where about 100 scholars in different Shastras are invited with a view to identifying the rare Veda Shakhas and their repositories and also to devise ways and means of preserving the oral tradition.

As a special incentive to preserve the oral tradition of Vedic studies, a scheme was introduced during 1978 under which each *swadhyayin* is expected to train two students each below the age of 12 years, one of them being their own son or near relative, in a particular Veda Shakha. Under the scheme, the scholar is getting an honorarium of Rs 1,250 p.m. and the student a stipend of Rs 175 p.m. Eight more units have been set up after examination in the Vedic convention held in August 1987 at New Delhi. They have already started functioning. In all, 16 such units have been assisted by the Government during 1987-88.

Rashtriya Veda Vidya Pratishthan has been set up with the objective to preserve, conserve and develop the oral tradition of Vedic recitation for which the *Pratishthan* will undertake various activities such as supporting traditional Vedic institutions and scholars, providing fellowships, scholarships, etc. In order to enhance employment possibilities of students passing out of Kendriya Sanskrit Vidyapeeths and other traditional Sanskrit institutions, a new scheme was introduced from 1982-83 to provide short-term vocational training to these students in subjects allied to Sanskrit studies, namely, ritualogy, epigraphy, manuscriptology, Sanskrit printing and composing, etc. For conducting these courses, 16 institutions were given cent per cent grant during 1986-87. Under the Shastra Chudamani scheme, young scholars are given in-depth coaching in the Kendriya Vidyapeeths/Adarsh Sanskrit Pathshalas, etc., in various disciplines by utilising services of eminent elderly scholars. These scholars are appointed on a monthly honourarium of Rs 1,000. Similarly, there are 25 institutions in the country which are given 95 per cent grant for popularising Vedic education. The Government is also providing financial assistance to eight Veda units which are engaged in the preservation of oral tradition of Vedic recitation.

The *Rashtriya Sanskrit Sansthan*, an autonomous organisation under the Department, with its headquarters at Delhi, exercises academic and administrative control over eight Kendriya Sanskrit Vidyapeeths situated at Delhi, Jammu, Allahabad, Tirupati, Guruvayoor, Puri, Jaipur, and Lucknow, where post-graduate Sanskrit education on traditional Shastras and research in various fields are conducted. Besides, 43 institutions in the country are affiliated to it for purposes of examination. The Sansthan conducts examinations right from Prathma to Vidyavaridhi and Vachaspati (Ph D and D Litt), respectively.

The Government is assisting contemporary authors of Sanskrit in publishing their books. The assistance has since been increased from 60 per cent to 80 per cent of the approved expenditure. Research institutions and established departments of universities are also assisted to prepare and publish critical editions of rare manuscripts and catalogues in Sanskrit. During 1987-88, 23 publications, six catalogues and critical editions were published with the government assistance. Assistance ranging from Rs 1,500 to Rs 10,000 has been given to the editors of 27 Sanskrit journals for improving their quality and contents. Besides, the Government is also assisting Dharam Kesh Mandal, Wai; All India Kashiraj Trust, Varanasi; Kalpatarn Research Academy, Bangalore, and some individuals for preparation and publication of certain projects relating to Sanskrit literature.

A programme has been launched from 1982-83 to bring out reproduction of important out-of-print Sanskrit books by photo offset process at reasonable prices through commercial publishers. Under the programme, about 100 publications have come out so far. The old and eminent Sanskrit scholars in indigent circumstances are being helped to the extent of Rs 3,000 per annum minus their personal annual income, which has been enhanced to Rs 4,000 per annum. About 1,500 scholars all over the country received this assistance during 1987-88.

PHYSICAL EDUCATION AND YOGA

The National Policy on Education declares that sports and physical education are an integral part of the learning process and also recognises the need for building up a nationwide infrastructure for physical education, sports and games consisting of play-fields, equipment, coaches and teachers of physical education as a part of the school improvement programme. In consonance with the National Sports Policy, the New Policy enjoins upon the Centre and states to promote and develop indigenous, traditional and modern games and sports and also *yoga* by providing facilities and infrastructure on a large scale.

SPECIAL RESEARCH ORGANISATIONS

The Indian Council of Historical Research, New Delhi, set up in 1972, enunciates and implements a national policy on historical research and encourages scientific writing of history. It operates research projects, provides financial support for research projects by individual scholars and awards fellowships and undertakes publication and translation work.

The Indian Council of Science Research, New Delhi, is an autonomous organisation set up to promote and coordinate social science research in the country. Its main functions are to review the progress of social science research, to give advice to its users in the Government or outside, to sponsor research, programmes and give grants to institutions and individuals for research in the field of social sciences.

The Indian Council of Philosophical Research with offices at New Delhi and Lucknow, has been set up by the Government to review the progress of research in philosophy from time to time, to sponsor or assist projects or programmes of research in philosophy, to give financial assistance to institutions and individuals in the conduct of research, etc.

The Indian Institute of Advanced Study, Shimla, set up in 1965, is a residential centre for advanced research in the fields of humanities, social sciences and natural sciences. It is a community of scholars engaged in exploring new frontiers of knowledge aimed at making major conceptual developments and offering inter-disciplinary perspectives on questions of contemporary relevance.

6 Cultural Activities

THE composite culture of India is essentially an expression of the inner urges and cumulative beliefs of its people gathered through centuries of experience. It is the perennial flow of this cultural stream which determines the nation's strength, its character and its capacity to survive as an integrated living reality despite heavy odds and its continuous march forward on the path of progress. Keeping this in view, preservation of the cultural heritage of the country, inculcation of art consciousness among the people and promotion of high standards of creative and performing arts and dissemination of culture, have been made a part of the objectives of the state policy.

The Central and state governments strive for the promotion and dissemination of art and culture through national and regional academies of art, dance, drama, music and letters. Zonal cultural centres have been set up in different regions of the country for projecting, preserving and sustaining the cultural kinship that transcends territorial limits. In addition, the Indira Gandhi National Centre for Arts is being set up at New Delhi as a resource centre and data base, encompassing all arts. All these institutions and the Departments of Arts and Culture at the Centre are helped in their objective by the media of mass communication and voluntary agencies. Apart from this, some eminent persons associated with the fine arts are, from time to time, nominated by the President to the Rajya Sabha in recognition of their attainments in their fields.

VISUAL ARTS

PAINTING

Important traditions of Indian painting include the murals of Ajanta, Ellora and other frescoes, the Buddhist palm leaf manuscripts, the Jain texts, the Deccan, the Mughal, the Rajput and the Kangra schools. The Bengal renaissance and the modern trends bring it to the present. While the modern trends in Europe and elsewhere have influenced modern Indian painting, Indian folk art and themes have been successfully revived and accepted.

ARCHITECTURE AND SCULPTURE

Till the advent of modern trends, architecture and sculpture in India were inspired mainly through the religious motif. The best examples are the temples, mosques, fortresses, palaces and other monuments which dot the Indian landscape. Massive buildings that have come up after independence and the city of Chandigarh symbolise the beginning of the modern period of Indian architecture. Contemporary Indian sculptors have contributed substantially to the creation of a new awareness of mass, volume and space.

LALIT KALA AKADEMI

To promote the understanding of Indian art, both within and outside the country, the Government established the Lalit Kala Akademi (National Academy of Fine Arts) in 1954. The Akademi strives to promote this objective through exhibitions, publications, workshops and camps. Every year it holds a national exhibition and every three years, the Triennale-India, an international exhibition.

The Akademi brings out monographs and portfolios on ancient Indian art both in English and Hindi and publishes a bi-annual art journal *Lalit Kala Contemporary* in English and *Samkaleena Kala* in Hindi.

The Akademi organises artists' camps, seminars and lectures and gives grants to recognised art organisations in the country. It honours eminent artists by electing them as fellows. So far 31 persons have been conferred fellowships. Ten awards of Rs 10,000 each are given to artists on the occasion of the national exhibition.

The Akademi has permanent artists' studio complex with facilities for training and practice in painting, ceramics, graphics and sculpture at Garhi, New Delhi and Calcutta. It has regional centres at Madras and Lucknow, where facilities for practical training and work have also been provided. Another regional centre is coming up at Bhubaneshwar.

In memory of Dr Ananda Coomaraswamy (1877-1947), the Akademi organises a lecture annually.

PERFORMING ARTS

MUSIC

There are two main schools of classical music, namely, *Hindustani* and *Carnatic*. Both schools continue to survive mainly through an oral tradition being passed on by the teacher to the disciple and this has led to the existence of family traditions called the *gharanas* and the *sampradayas*.

The patronage to music is both state-supported and popular. The Sangeet Natak Akademi, All India Radio, Doordarshan, films, voluntary organisations and cultural associations are the main agencies that have brought about a nationwide awareness and appreciation of music.

In recent years, there has been a great revival of interest in folk and tribal music, which has been staged in various cities. Growing in popularity is another category of music, which has come to be known as 'light music'.

DANCE

Dance in India has an unbroken tradition of over 2,000 years. Its themes are derived from mythology, legends and classical literature. There are two main divisions of Indian dance, namely, classical and folk. Under classical are those dance forms, which are based on ancient dance discipline and have rigid rules of presentation. Among the leading forms of classical Indian dance are *Bharat Natyam, Kathakali, Kathak, Manipuri, Kuchipudi* and *Odissi*. Bharat Natyam has roots in Tamil Nadu. Kathakali is the dance-drama of Kerala. Kathak is the principal classical dance of north India and was revitalised as a result of the fusion of Mughal influence with Indian culture. Manipur, in the eastern region, has contributed a delicate, lyrical style of dance Manipuri. Kuchipudi is a dance-drama from Andhra Pradesh. Its themes are culled from the epics, the *Ramayana* and *Mahabharata*. Oddissi from Orissa, once practised as a temple dance, is today widely interpreted by artists. The folk and tribal dances of India are of numerous patterns.

Both the classical and folk dances of India owe their present popularity to institutions like the Sangeet Natak Akademi and training institutes and cultural organisations in different parts of the country. The Akademi gives financial assistance to cultural institutions for training in different forms of dances. The Akademi awards fellowships to scholars, performers and teachers to promote advanced study and training in different forms of dance and music, especially those which are rare.

THEATRE

Theatre in India is as old as her music and dance. The classical theatre survives only in few parts of the country. The folk theatre can be seen in its regional variants practically in every linguistic region. There is also the professional theatre, which is mainly city-oriented. Besides, a rich tradition of puppet theatre is found in various parts of the country. Among the many forms prevalent are the puppets, rod puppets, glove puppets and leather puppets (shadow theatre).

There are several semi-professional and amateur theatre groups active in many big cities, performing plays in Indian languages and English.

SANGEET NATAK AKADEMI

The Sangeet Natak Akademi, the national academy of music, dance, and drama was set up in 1953 for the furtherance of the performing arts of India, a task in which it cooperates with its counterparts in the states and voluntary organisations. Through sponsorship, research and dissemination, it seeks an enhanced public appreciation of music, dance and drama, together with a quickened exchange of ideas and techniques for the common gain of Indian performing arts. As part of its coordinating and promotional activities, it holds seminars and festivals, presents awards to outstanding performing artistes, gives financial assistance for theatre productions, extends financial help to traditional teachers and grants scholarships to students. It operates a scheme of inter-state exchange of troupes to promote national integration through dissemination of culture. It also supports regional festivals to bring rare art forms of the region to the fore and to promote cultural integration.

In view of the many theatrical, musical and dance forms prevalent in the country, the Akademi has set up a special unit for surveying and documenting them. Its disc and tape library has the largest collection of Indian classical, folk and tribal music and dance and theatre items.

The Akademi is running two national institutions for imparting training in dance. These are the Kathak Kendra, New Delhi, and the Jawaharlal Nehru Manipur Dance Academy, Imphal. It has been helping in the resurgence of the puppet theatre in the country. It operates a scheme under which subsidy is given for publication of books in various Indian languages and English on music, dance and drama. It honours outstanding performing artistes and schools by conferring fellowships and annual awards

NATIONAL SCHOOL OF DRAMA

The National School of Drama, a premier theatre institution, was established in 1959 by the Sangeet Natak Akademi. In 1975, the school was registered as an autonomous institution, fully financed by the Government. It imparts training in dramatics and is propagating theatre in the country. The school has been teaching the theory and practice of drama in a scientific way to talented and enthusiastic young students. It has directly and indirectly played a constructive role in improving the overall standard of plays being produced and techniques being used therefor. It has also gone to the regions for organising theatre workshops and children's theatre training courses so as to make available training facilities to local theatre enthusiasts and in order to facilitate training of its students in folk, traditional and regional theatre forms. Under its three-year training programmes, it awards scholarships to deserving students and also provides one-year fellowships. It imparts training in theatre arts and contributes to the development of Indian theatre by training actors, directors and stage technicians. It is conducting a three-year diploma course and provides advanced theatre training in dramatic literature, acting, stage craft and production.

BROADCASTING

The All India Radio and Doordarshan have been contributing to bring about an awareness and appreciation of Indian music—classical, light classical, folk and tribal. It has many national programmes to propagate music. The *Vividh Bharati* service of All India Radio broadcasts popular film and light music.

LITERATURE

Rediscovery of ancient and medieval Indian literature and development of modern literature in the major Indian languages and in English mark the literary activities in present-day India. A large number of literary periodicals and magazines, literary institutions and the All India Radio have given impetus to the growth of modern Indian literature.

SAHITYA AKADEMI

The Sahitya Akademi (National Academy of Letters) was set up by the Government in March 1954, for the development of Indian letters and to set high literary standards to foster and coordinate literary activities in all the Indian languages and to promote through them the cultural unity of the country.

The Akademi honours persons of undisputed eminance in literature by electing them as fellows, whose number at no time is to exceed 21. At present there are nine elected fellows: Vaikom Muhammad Basheer, Jainendra Kumar, Dr K V Puttappa, Kalindi Charan Panigrahi, Dr Sukumar Sen, Dr V R Trivedi, Dr K Sivarama Karanth, Dr K R Srinivasa Iyengar and Dr Umashankar Joshi. It awards annual prizes to works of outstanding merit in the 22 recognised languages. The Akademi has so far made 504 awards. The cash award till 1987 was Rs 10,000, which has now been raised to Rs 25,000. It proposes to start giving Translation Award of Rs 10,000 each in 22 Indian languages from 1989.

The Akademi organises literary gatherings, workshops, seminars, symposia and writers' meets to provide opportunities for writers to exchange views. It also provides travel grants to enable writers of one region to visit regions other than their own, to widen and deepen their awareness. The Akademi maintains a library at Rabindra Bhavan, New Delhi, with over 80,000 books of literary importance in over 22 languages of India and in some foreign languages; along with a reading room where over 200 journals are available for reading and reference. As an affiliate body of the *Union Academique Internationals*, Brussels, the Sahitya Akademi maintains contact with literary and cultural institutions in foreign countries.

The Akademi's publication programme is devised to meet the challenge posed by a multilingual society, resulting in the anomaly that while Indian literature is one, writers and readers in one language know very little of what is being written in the same language in the neighbouring countries. This is done in two ways; first by publishing informative material regarding literary activities in all the Indian languages, second by publishing translation of literary masterpieces, both old and modern, from one Indian language into other languages. This is supplemented by translations of foreign classics into Indian languages so that the best of the world literature is available in Indian languages.

Some of the important publications are *The National Bibliography of Indian Literature* (1901-1953) (4 volumes), *Who's Who of Indian Writers* (1983), *Histories of Literature* (15 volumes), monographs in *Makers of Indian Literature* (100 volumes), *Encylopaedia of Indian Literature* (2 volumes) and anthologies and selections. It has so far published about 1,500 books in 24 languages. The Akademi publishes two journals *Indian Literature*, a bi-monthly journal in English and *Samakaleena Bharatiya Sahitya*, a quarterly in Hindi.

The Akademi arranges the programme of *Samvatsar Lectures* (annual lectures) which are delivered by eminent writers at the time of 'Annual Festival of Letters' of the Akademi generally held in February. The Akademi has introduced a new programme 'Meet the Author' where eminent men of letters are invited to speak about their own personal experience.

The Akademi has established four regional boards for the pursuit of inter-regional studies. In this way a ground is prepared for the development of the idea of Indian literature. Besides, a language development board for taking up work of development of Indian languages has also been established by the Akademi.

FELLOWSHIPS AND FINANCIAL ASSISTANCE

To provide basic financial support to outstanding persons for creative work in various fields of the performing, plastic and literary arts in the age group 25-65, 15 senior fellowships and 35 junior fellowships of the value of Rs 1,000 and Rs 500 respectively per month, each tenable for two years, are awarded every year since 1979-80. The number of senior fellowships has been increased to 30 and that of junior fellowships to 75 from 1988-89. These fellowships are given for specified schemes and projects suggested either by the artistes themselves or selected at the initiative of the Government.

Ten eminent artistes who have achieved high degree of excellence and have acquired national/international fame but have since retired from professions are awarded fellowships of the value of Rs 2,000 per year for continuing experiments in the field of performing, literary and plastic arts.

Persons distinguished in letters, arts and such other walks of life, who are above 58 years of age and have an income of less than Rs 1,000 a month, are considered for grant of financial assistance up to Rs 600 a month. Young artistes of outstanding promise in the age-group 18-28 are awarded 150 scholarships every year for advanced training in music, classical forms of Indian dances, traditional theatre, drama, painting and sculpture. A scholar gets Rs 400 a month for two years

The Sangeet Natak Akademi selects candidates for performing arts and the Lalit Kala Akademi for plastic arts.

ARCHAEOLOGY

The Archaeological Survey of India (ASI), founded in 1861, is the leading institution in the field of archaeological research and activities. It conducts programmes of large scale problem-oriented exploration and excavation of prehistoric, protohistoric and other ancient sites, as also the architectural surveys, landscaping around monuments, chemical preservation of sculptures, monuments and museum objects, epigraphical research, maintenance of 31 archaeological museums located near ancient sites and group of monuments, publication of archaeological and epigraphical periodicals and books, etc. It also carries out preservation work of monuments and sites abroad.

The landmark of the Indian archaeology is the discovery of the Indus Valley Civilization in 1921. After the partition, practically all the Harappan sites went over to Pakistan but the systematic work of the ASI made it possible to discover many Harappan sites along the riverbed of the Saraswati and the western coast. The most important sites excavated since 1947 include Lothal, Kalibangan, Ropar, Surkotada, Banawali, Hulas and Daimabad. The northern limit of the Harappan culture is Manda in Jammu and Kashmir and the southern limit is Daimabad in Maharashtra.

The Indian archaeologists could bridge the gap once known as the 'Dark Period' of Indian history through the discovery of the neolithic and chalcolithic cultures in different parts of India. For the first time an aceramic level of neolithic culture has been encountered at Gufkral in the Kashmir valley. From the valley of river Tista and its tributaries in Sikkim have been brought to light a variety of tools including contact with south China. The recent excavations at Ganesvara in Rajasthan revealed certain evidences of the copper age in India. Nagwada excavation revealed other antiquities of Harappan culture.

Notable discoveries of this year include bronze images of Jain Tirthankar of 10th-11th century at Goru and murals of 18th-19th century at Jaitaram, Bulunda in Rajasthan; monolithic rock-cut temple at Vashavi in MP; further excavation at Lalitgiri revealed an inscription on a pedestal dated to second-third century AD.

Ancient remains and archaeological monuments numbering more than 5,000, which are protected under the law as monuments of national importance are looked after by the ASI while those not of national importance are maintained by the states. The key preservation works undertaken by the ASI include Dwarikadhis temple, Ranika-vav, Jami masjid in Gujarat; Surajkunda; Kabuli Bagh Mosque, Pather Masjid in Haryana; rock-cut temple at Masrur, Buddhist monastries at Tabo in Himachal Pradesh; Ram Bagh Gate at Amritsar and Fort at Bhatinda in Punjab; Sun temple at Konark; deplastering of the main temple of Jagannath at Puri; Buddhist stupa at Lalitgiri; the monastery complex at Udaigiri in Orissa; Kantideul at Ratnapur, Mahadev temple at Bastar and Laxman temple at Sirpur in Madhya Pradesh.

Indian expertise in the field of structural and chemical preservation is an acknowledged fact. The conservators' teams from the ASI were sent to Kampuchea and Bhutan. A team was sent to Maldives Island for excavation and exploration of the Buddhist sites under the aegis of the South Asian Association for Regional Cooperation (SAARC). Another team was sent to Angola for setting up an army museum.

The task of implementation of Ancient Monuments and Archaeological Sites and Remains Act, 1958, and the Antiquities and Art Treasure Act, 1972, is also carried out by the ASI. Under the Antiquities and Art Treasure Act, 1972, any object which is over 100 years old (75 years in case of manuscripts, documents and the like) having artistic and archaeological interest can-not be exported without a valid permit from the Archaeological Survey of India. A permit is also required for the export of works of art of some of the renowned artists which have been declared as art treasures under the Act. At all international exit points an expert advisory committee functions to issue non-antiquity certificates. The scheme of registration of sculptures and paintings in all media, besides illustrated, painted or illuminated manuscrips which are over 100 years old, is also in operation. The Act also requires that the trade in antiquities is to be carried out by persons duly licensed by the licensing officers of the ASI. As per the provisions of the Ancient Monuments and Archaeological Sites and Remains Act, 1958, permission is required for filming and photographing with stands at Centrally-protected monuments and museums and no archaeological excavation can be carried out anywhere in India without a license issued by the Director General, ASI.

The Archaeological Survey of India conducts a two-year post-graduate Diploma Course in Archaeology at the Institute of Archaeology which has attracted students from neighbouring countries as well. Besides the research programmes, the Institute has short-term courses in conservation and epigraphy. Archaeology is also being taught at the post-graduate level in some of the universities. The publication wing of the ASI has published certain important reports. The annual publication 'Indian Archaeology—A Review' is regularly being brought out. Certain guide books have also been published.

The ASI library is one of the oldest in the country. It contains rare books and journals not only on India but also on South-East Asia and West Asia. There is a separate library of photographs apart from a study collection of ancient ceramics of the Indo-Pak sub-continent.

MARINE ARCHAEOLOGY

A Marine Archaeology Unit was set up in the National Institute of Oceanography, Goa, with a view to exploring and excavating submerged ports and sunken ships. The project, supported by the Department of Science and Technology, undertook offshore survey of the legendary city of Dwarka on Gujarat coast, supposed to have been built by Sri Krishna and subsequently submerged under the sea. Underwater excavation in the ancient harbour seaward of the Temple of Sea God (*Samudranarayana*) brought to light a submerged structure of massive building blocks corroborating the findings of onshore excavation in which three temples (1st-9th century AD) and two townships (10th and 15th century BC) were found destroyed by the sea. Offshore exploration of Bet Dwarka, an island settlement off Port Okha, associated with Sri Krishna's legend, yielded conclusive evidence of the submergence of a 15th-14th century BC town. A massive wall *in situ* in 3.6 metre water depth at high tide is found built on a wavecut bench. Among important protohistoric antiquities recovered from underwater excavation, mention may be made of a unique late Indus Valley seal and an inscribed jar mentioning the Sea God and seeking his protection.

Further excavation 600 m seaward of Dwarka brought to light a submerged stone-built jetty and triangular stone anchors with three holes closely resembling those found in Ugarit (Syria) and Kition (Cyprus) is 1300 BC levels; Dwarka anchors also belong to the same period. The ancient city of Dwarka is found to have extended over two km up to Rupen. The city of Bet Dwarka (Shankhodara) was four km long as attested by the submerged walls *in situ* near Balapur Bay. It is now obvious that the second urbanisation in India took place during the 15th-14th century BC, a thousand years before the Achaemenid cities came into existence. The iron objects found in Bet Dwarka waters indicate that the iron technology was in a primitive stage.

Excavation in the Arabian Sea 700 m seaward of the temple of Sea God brought to light remnants of fortification walls and bastion built of massive limestone blocks confirming thereby that the ancient city of Dwarka was fortified as described in the *Mahabharata*. It is termed as *Varidurga* (a fortress in water). The submerged structures are *in situ* at 6.14 m below mean sea level and the ancient sea level must have been 9 m below the present one. The thermoluminiscence date of pottery from the section of the wall is 3,520 years ago. This date corroborating the archaeological evidence fixes the date of the Mahabharata also.

Marine records of the state and National Archives were examined and particulars of 200 shipwrecks in Indian waters were noted. Among them 30 wrecks are of historical significance. It is proposed to explore and excavate a couple of them. Shipwrecks in Sri Lanka, Mauritius and Malaysia waters also find mention in these records. The twin objective of marine archaeological investigations is to reconstruct the history of maritime trade, ship-building and cultural migrations and to furnish data useful to sedimentologists and naval architects in dating the samples and ascertaining the coastal erosion.

The Marine Archaeology Unit discovered a shipwreck four km off Marmagao harbour in Goa. This steel-hulled ship about 32 m long is covered by sediment and efforts are being made to identify and excavate the vessel lying buried in 1.5 m thick sediment.

While Marine Archaeology has given a new dimension to oceanography, the discovery of the legendary city of Dwarka has added a new chapter to Indian history. The data on sea level fluctuation generated by marine archaeology is useful for eustatic studies.

MUSEUMS

The museums are repositories of cultural, historical, technical, industrial or other kinds of material for preservation against decay and for transmission to posterity as records for history. They serve as important audio-visual means of education.

The Constitution makes the states primarily responsible for setting up and maintenance of museums. The Central Government has, however, set up a number of important museums and provides financial assistance for the development of private museums, university museums, etc. Emphasis is laid on documentation of existing collection in the government and private museums, preservation of the collection using latest scientific aids and publication of catalogues of collections.

In the field of Indian art and archaeology, the Government has established the National Museum, New Delhi; Indian Museum, Calcutta and Salar Jung Museum, Hyderabad. The Allahabad Museum, run by the Allahabad Municipal Corporation, was taken over by the Department of Culture in 1986. In the contemporary history and art, Victoria Memorial Hall, Calcutta; National Gallery of Modern Art, New Delhi and the Nehru Memorial Museum and Library, New Delhi, are the three museums financed by the Government.

The National Museum, established in 1948, is one of the premier institutions in the country and its main activities are in the field of acquisition, exhibition, conservaton, publication and education. The museum has been entrusted with the work of coordination of Festival of India in various countries to project the cultural image of the country. Indian Museum, the first museum of the country having been established in 1814, is the most illustrious art and archaeology museum. The Salar Jung Museum has a wide range of collection of objects of art. It has more than 7,500 manuscripts in Persian, Arabic and Urdu. The Victoria Memorial Hall is mainly a historical art gallery and contains relics and mementos relating to British period of Indian history covering 1700-1900 AD. This is now being converted into a period museum in which due place is being given to the freedom struggle of the Indian people. Materials are being collected so as to set up an extensive gallery for projecting tribal and peasant movements of the eighteenth and nineteenth centuries.

The National Gallery of Modern Art, set up in 1954, has a collection of over 3,500 works of art representing various styles, spanning more than a century. Among the distinguished Indian artists whose works are in the collection are: Raja Ravi Varma (1848-1906), Abanindranath Tagore (1871-1951), Nandalal Bose (1883-1966), Devi Prasad Roy Chowdhury (1899-1975), Binod Behari Mookerjee (1904-1980), Ramkinkar Vaij (1910-1980), Rabindranath Tagore (1861-1941), Gaganendranath Tagore (1867-1938), Jamini Roy (1887-1972) and Amrita Sher-Gil (1913-1941). The gallery arranges special exhibitions of national and international art.

There are at present 400 museums in the country managed by different agencies. Some of the important museums are: Indian War Memorial and Archaeological Museum at Red Fort, National Museum of Natural History, Crafts Museum and Rail Transport Museum, all in New Delhi; Asutosh Museum, Calcutta; State Museum, Hyderabad; Prince of Wales Museum of Western India, Bombay; Government Museum, Madras; Bharat Kala Bhavan, Varanasi; State Museum, Lucknow, and Calico Textile Museum, Ahmadabad. There are archaeological museums at ancient sites, *e.g.*, Konark, Amaravati, Nagarjunakonda, Sanchi, Nalanda, Sarnath, etc. There are also museums of dolls, textile design and for children in places like Delhi, Ahmadabad and Lucknow.

To promote dissemination of culture through museums, a number of programmes have been launched by each Central museum. This includes extension of their educational activities and organising periodical lectures and exhibitions to make people aware of their cultural heritage. A new scheme has been launched by the Department of Culture to promote dissemination of culture through museums. Under this scheme museums are invited to organise on reciprocal basis exhibitions of their art treasure. The Department of Culture undertakes to give financial assistance to cover insurance, transportation, etc., of their art treasure.

The National Museum has undertaken the coordination of Festival of India Exhibitions in the USSR in 1987. As many as six exhibitions of Indian classical art and antiquities have been held in that country. Similarly, the National Gallery of Modern Art has sent three exhibitions to the USSR under the Festival of India.

TRAINING IN MUSEOLOGY

Regular degree and diploma courses in museology are being conducted by the universities of Aligarh, Baroda, Bhopal, Calcutta, Pilani and Varanasi.

Government organises annually museum camps at different places in the country, a six-week in-service training course as well as the three-month course on conservation of museum materials in the National Museum, New Delhi, and also awards fellowships for training in India and abroad. The National Museum in conjunction with National Gallery of Modern Art/Victoria Memorial and National Research Laboratory for Conservation of Cultural Property (NRLCP), has taken up a project in restoration and preservation of art works of non-Indian origin.

NATIONAL COUNCIL OF SCIENCE MUSEUMS

The National Council of Science Museums (NCSM) was set up in April 1978, as an autonomous organisation with headquarters at Calcutta, for popularisation of science through the two existing science museums in India, the Birla Industrial and Technological Museum in Calcutta and the Visvesvaraya Industrial and Technological Museum in Bangalore; and also with the setting up of a chain of science museums and centres of various levels in different parts of the country. Within a decade six science centres were set up at Purulia, Gulbarga, Dharampur, Tirunelveli; Shrikrishna Science Centre, Patna; and Nehru Science Centre, Bombay. In addition, work is in an advanced stage for opening of regional science centres at Bhubaneshwar, Lucknow, Guwahati, Bhopal; National Science Centre, Delhi; and Raman Science Centre, Nagpur. Planning is ahead for setting up a Regional Science Centre at Tirupati and four sub-regional science centres at Imphal, Goa, Calicut and Vijaywada.

The NCSM has set up a massive Central Research and Training Laboratory (CRTL) at Calcutta for research and development of exhibit prototypes and training of museum personnel in all disciplines.

The Council, through its constituent units, regularly conducts multifarious educational activities for children, students, teachers, rural people, housewives and unemployed youth.

ARCHIVES

The records and manuscripts constitute an important part of the rich Indian cultural heritage. These are the major repository of the contribution that our predecessors made in the diverse fields of religion, philosophy, astronomy, literature, history, medicine and science. They constitute the primary source of reconstruction of India's past. Government has jurisdiction only over libraries established by it and institutions of national importance declared so. However, it takes initiative to secure the voluntary cooperation of the state governments and to promote a coordinated development of national, state and other libraries.

NATIONAL ARCHIVES

The National Archives of India, New Delhi, is the largest and perhaps the best organised record repository in Asia. It has three regional repositories at Bhopal, Jaipur and Pondicherry. It houses several million public records, maps, private papers, microfilms, and a huge volume of books occupying a total length of 34 km of shelf space. A large number of scholars from India and abroad are provided facilities for research. The major activities being carried out by the Archives include assistance to the ministries/departments in their record management programmes, acquisition of private papers of national importance and micro-film copies or records of Indian interest from abroad, conducting research for improvement and updating of preservation techniques, giving financial assistance to institutions for preservation/documentation of manuscripts and other holdings of national importance, and creating archival consciousness among the masses through exhibitions, seminars, etc. Besides publishing a bi-annual journal, *The Indian Archives* and *Bulletin of Research Thesis and Dissertation,* it also brings out a national register of private records, guides to different series of records and other reference media. Another scheme aims at publishing six volumes of guides to the holdings of the archival institutions in India under a UNESCO sponsored project, *Guide to the Sources of Asian History.* It runs a one-year diploma course and short-term courses of eight weeks duration on different aspects of archival science in the School of Archival Studies, which is the only institution of its kind in Asia.

MANUSCRIPT LIBRARIES

KHUDA BAKHSH ORIENTAL PUBLIC LIBRARY

The Khuda Bakhsh Oriental Public Library, Patna, established in 1891, has the richest collection of Arabic and Persian manuscripts and Mughal paintings. The library was declared an institution of national importance in 1969 by an Act of Parliament. Besides its traditional activities of acquisition and preservation of manuscripts and books, it has brought out subjectwise 34 descriptive catalogues of its manuscripts. It also brings out a quarterly research journal. It holds annual and extension lectures on various disciplines including current affairs. It has started a project to publish critical editions of rare manuscripts. So far, critical editions of 11 manuscripts including those of unique manuscripts of *Diwan-e-Hafiz, Diwan-e-Mushafi, Diwan-e-Mubad* have been published. To accelerate the pace of research and publications, it has started a five-year programme of holding South Asian Regional Seminars on the relevant subjects of the library. It has also instituted research fellowships, visiting fellowships and national fellowships. A Khuda Bhakhsh Award has also been instituted on the pattern of Jnanpith and Sahitya Akademi awards, which will be presented to scholars of repute in the concerned disciplines of the library.

TMSSM LIBRARY

The Thanjavur Maharaja Sefroji's Saraswati Mahal (TMSSM) Library, Thanjavur, which has its roots in the time of imperial Cholas was taken over by the then Madras Government in 1918. The library was registered on 9 July 1986 as a society under the Tamil Nadu Registration Act, 1975. It has a rich collection of about 44,477 manuscripts in Sanskrit, Marathi, Tamil, Telugu and other languages, besides a collection of over 4,500 books in the Indian and European languages covering various disciplines.

RAMPUR RAZA LIBRARY

The Rampur Raza Library, Rampur, has a collection of about 50,000 printed books, 15,000 manuscripts besides about 900 miniature paintings, *bhojpatras*, etc. The holdings of the library cover nearly all the important oriental languages like Arabic, Persian, Sanskrit, Urdu, Hindi, Pushto and Turkish. The manuscripts in these languages represent all the important subjects. A large number of manuscripts are rare. In the book section, hundreds of rare Arabic, Persian and Urdu books which are now out of print and important for higher research purposes are available. Other attractions of the collection are miniature paintings which are considered immensely valuable for researchers, scholars of Iranian tradition and Indo-Moghul art style of paintings.

ASIATIC SOCIETY

The Asiatic Society, Calcutta, was founded in 1784 by Sir William Jones (1746-1794), eminent Indologist, with the objective of inquiring into the history (civil and natural), the antiquities, arts, science and literature of Asia. This institution proved to be the fountain-head of all literary and scientific activities in India and patron of all the Asiatic societies in the world. The society has a rich collection of rare books, manuscripts, coins, old paintings, inscription and archival materials. The society maintains a museum which includes an Ashokan Rock Edict, the copper plates range in date from the third century BC to the 18th century and represent important documents for the study of Indian history and culture. The coin collections cover practically the whole range of Indian numismatics from the earliest issues to the latest. Amongst the important activities of the society is publication of the *Bibliotheca Indica*, which consists of a series of oriental texts in Sanskrit, Arabic, Persian, Bengali, Tibetan and other Asian languages and their translations.

Some of the other important manuscript libraries are: Government Oriental Manuscript Library, Madras; Oriental Research Libraries at Pune and

Vadodara; Sanskrit University Library, Varanasi, Visheshwaranand Vedic Research Institute Library, Hoshiarpur, and Maulana Azad Aligarh Muslim University Library, Aligarh. In addition, there are over 500 other libraries belonging to state governments and private agencies which have thousands of manuscripts.

LIBRARIES

Libraries are the keepers of our history and culture. The development of the library system is an important component of the scheme of non-formal and continuing education. Constitutionally the subject 'libraries' is included in the State list. The Centre has jurisdiction only over libraries established by it and institutions of national importance as declared by it. There are more than 60,000 libraries of all descriptions in the country.

The National Library, Calcutta, serves as a prominent repository of all reading and information material produced in India as well as for all printed materials written by Indians and concerning India written by foreigners, wherever published and in whatever nature. In addition, it has a rich collection of Persian, Sanskrit, Arabic and Tamil manuscripts and also of rare books. As the repository library in South Asia, it receives materials and documents from United Nations and its agencies. It maintains exchange relations with 191 institutions in 69 countries.

The Central Reference Library, Calcutta, is responsible for the compilation, publication and sale of the *Indian National Bibliography*. This is a monthly/annual bibliography containing the entries of the current Indian publications in major Indian languages and in English received under the Delivery of Books Act, 1954. The library is also compiling and publishing *Index Indian,* an annual index of selected articles appearing in current Indian periodicals in major Indian languages.

The Delhi Public Library established in 1951 with the financial and technical assistance from UNESCO has since developed into a big metropolitan public library system consisting of a central library, 27 branches/sub-branches and community libraries, a Braille library, 17 Braille mobile service points and seven Braille deposit stations, 31 resettlement colony libraries and reading rooms, two hospital libraries, one central jail library and a network of mobile service stations serving 66 areas and 22 deposit stations spread all over the Union Territory of Delhi.

The Raja Rammohun Roy Library Foundation, Calcutta, a non-statutory autonomous body, supports and promotes library services in general and public library services in particular all over the country in cooperation with the states and union territory administrations and other voluntary agencies in the field.

COPYRIGHT LIBRARIES

Under the Delivery of Books and Newspapers (Public Libraries) Act, 1954, four libraries are entitled to receive a copy of every new book and magazine published in the country. These are National Library, Calcutta; Central Library, Bombay; *Cannemara Public* Library, Madras and Delhi Public Library, Delhi.

OTHER LIBRARIES

There are also specialised libraries providing facilities to researchers. Prominent among them are the Indian Council of World Affairs, New Delhi; Indian Statistical Institute, Calcutta; Gokhale Institute, Pune; Theosophical Society, Madras; National Council of Applied Economic Research, the Indian Institute of Public Administration, and the Central Secretariat Library, all in New Delhi. Apart from these some of the bigger universities also have sizeable collections.

INSTITUTIONS OF TIBETAN AND OTHER HISTORICAL STUDIES

Many centuries ago, Indian scholars took arduous journeys across the Himalayas to Tibet and with them they carried Indian philosophy and thought. The evolution of Tibetan thought and culture was a consequence of this interaction.

After independence a number of Buddhist institutions were started in India. Amongst them were the School of Buddhist Philosophy, Leh, set up in 1959, now renamed as the Central Institute of Buddhist Studies, and the Central Institute of Higher Tibetan Studies, Varanasi. Both are fully financed by the Department of Culture. The main objectives of these institutions are preservation of Tibetan culture and tradition and imparting studies in ancient and traditional subjects through a modern university framework and conducting research in Tibetan studies. Besides, Government gives grants to Sikkim Research Institute of Tibetology, Gangtok, and Library of Tibetan Works and Archives, Dharmasala.

The Institute of Tibetan Studies was established in Varanasi as a constituent wing of Varanaseya Sanskrit Vishwa Vidyalaya. It became a fully autonomous organisation in 1977 and was renamed as the Central Institute of Higher Tibetan Studies. The Institute has a planned programme of training, research and publication which would bring to light the Tibetan heritage, particularly a body of knowledge of the Indian heritage which was lost to Sanskrit and Pali but was preserved in Tibet.

The Central Institute of Buddhist Studies, Leh, was established in 1959 to train students in Buddhist philosophy, literature and arts. The Institute is affiliated to the Sampurnanad Sanskrit Vishwa Vidyalaya, Varanasi.

FINANCIAL ASSISTANCE

Financial assistance to the tune of Rs 2 lakh per year is provided to voluntary Buddhist/Tibetan organisations including monasteries engaged in the propagation and scientific development of Buddhist/Tibetan culture, tradition and research in ralative fields.

INSTITUTIONS OF ANTHROPOLOGY AND ETHNOLOGY

ANTHROPOLOGICAL SURVEY OF INDIA

The Anthropological Survey of India, Calcutta. is a research organisation under the Department of Culture in the Ministry of Human Resource Development. Since its inception in 1945, it carries out researches on bio-cultural aspects of the Indian population particularly on the contemporary problems being faced by the tribes and weaker sections. It conducts exploratory surveys in order to unearth, preserve and study the ancient human remains. Besides, it collects documents and disseminates bio-cultural information of Indian population through its anthropological museums and other media. In the Seventh Plan programmes, 16 national projects have been identified including one entitled "People of India". This project seeks to generate up-to-date ethnographic information on all the communities of India (5,000), and to highlight in particular the linkage that brings them together. The project is being implemented with the active participation of scholars from various universities, tribal research institutes and other organisations interested in this field of research. Through a computer format, data is processed so as to generate profile on each community. Nearly 79 per cent of the target has so far been achieved. The reports on the communities of Andaman and Nicobar Islands and north-east India have been finalised which are being edited for publication.

RASHTRIYA MANAV SANGRAHALAYA

Rashtriya Manav Sangrahalaya (RMS), Bhopal, earlier known as National Museum of Man, is conceived as an institution dedicated to depict the integrated story of humankind highlighting human biological and cultural evolution with a special reference to India. The RMS is completely anthropological-oriented institution, with a focus on the three major topics: (i) human evolution and variation; (ii) life and society in prehistoric times; and (iii) patterns of culture. The outstanding feature of the Sangrahalaya will be its outdoor complex with thematic permanent open-air exhibition. The Sangrahalaya will combine research with dissemination of knowledge through informal mode of education.

During the past few years, the Sangrahalaya has developed 'Tribal Habitat', an open-air exhibition of tribal dwellings representing 13 tribal populations in different parts of the country. This exhibition was opened for public in January 1988 and will further be developed to represent few more tribal sections. The RMS is preparing an exhibition on the 'Rock Art Heritage' around the painted rock shelters. Two more open-air exhibitions will be developed in the coming year. One of the important programmes of RMS is 'Operation Salvage', which envisages collection and preservation of the fast vanishing aspects of the cultural heritage of India.

NATIONAL RESEARCH LABORATORY FOR CONSERVATION OF CULTURAL PROPERTY

The National Research Laboratory for Conservation of Cultural Property (NRLC), Lucknow, a premier institution of its kind in Asia, conducts fundamental research for development of better techniques for conservation of objects of art, archaeology, ethnology, etc. It provides technical advice to museums, archaeology departments, archives and other institutions having objects of cultural property. It provides training to curators, archaeologists and other custodians of art objects in "Care and Maintenance of Museum Objects". It also trains conservators coming from countries of south and south-east Asia. It has acquired very sophisticated and advanced equipment under several UNDP projects for conducting research and for conserving cultural property. The laboratory has a library which is the best of its type in this part of the world.

A regional conservation laboratory, a unit of NRLC has been set up at Mysore to cater to the needs of the southern states.

PROMOTION AND DISSEMINATION OF CULTURE

The Centre for Cultural Resources and Training (CCRT) was set up in 1979 as an autonomous organisation fully financed by the Government. The Centre had taken over the scheme 'Propagation of Culture' which was being implemented by the University of Delhi from 1970 onwards.

The broad objective of the Centre is to revitalise the education system by creating an understanding and awareness among the students about the plurality of regional cultures of India and integrating this knowledge with the curriculum subject. To fulfil its objectives, the Centre organises a number of training programmes for the benefit of in-service teachers drawn from primary/high/ higher secondary schools and teacher educators in different parts of the country. The main thrust of the training programmes is in the area of linking education with culture and making students aware of the role of culture in all aspects of India's developmental programmes. The training programmes dwell on the role of culture in science and technology, housing, agriculture, medicine, etc. An important component of the training is creating an awareness amongst students and teachers of environmental pollution problems and their role in conservation and preservation of the natural and cultural heritage.

The Centre is collecting resources in the form of slides, photographs, films and recordings so as to prepare cultural educational material for free distribution to schools. It also produces various other programmes in order to promote dissemination of culture.

The Centre took over the Cultural Talent Search Scholarship Scheme from the Department of Culture in 1982. The scheme provides facilities to outstanding children in the age-group 10-14 studying either in recognised schools or belonging to families of practising traditional performing or other arts to develop their talent in various cultural fields, laying special emphasis on rare art forms.

With the introduction of the National Policy of Education, 1986, the Centre has, since the last two years, taken on the additional task of formulating and implementing schemes related to the Cultural Perspective of the Programme of Action of the National Policy of Education. In the field of production and distribution of primary school resource material, training of teachers at district level and setting up of school museums, preparatory work and training has begun. A number of new schemes have been added to the on-going projects of CCRT. These envisage stepping up of production of cultural resources and software for education, introduction of cultural component in schools under minimum cultural content programme. New programmes are being proposed for: (i) assistance to states and Central institutes for preparation of model studies and cultural software; (ii) study in value-oriented education; (iii) setting up of evaluation studies; and (iv) review of text books.

For the purpose of imparting training and setting up of school museums, the Centre is conducting programmes in different parts of the country. Youth camps are also planned in different parts of the country to fulfil the objective of interaction between school-going urban youth with their age-groups in rural and tribal areas for working for the conservation of the natural and cultural property of the country.

ZONAL CULTURAL CENTRES

Zonal cultural centres have been conceptualised with the aim of projecting cultural kinships transcending territorial bounds. The idea is to arouse and deepen awareness of the local cultures and how these merge into zonal identities and eventually into the rich diversity of India's composite culture. Besides, these are also intended to document, preserve and to sustain the vanishing art forms and oral traditions. The involvement of artists and creative people has been inbuilt in the set-up through a system of autonomous governance.

The seven zonal cultural centres established under the new scheme are: (i) North Zone Cultural Centre, Patiala; (ii) Eastern Zone Cultural Centre, Santiniketan; (iii) South Zone Cultural Centre, Thanjavur; (iv) West Zone Cultural Centre, Udaipur; (v) North-Central Zone Cultural Centre, Allahabad; (vi) North-East Zone Cultural Centre; Dimapur; and (vii) South-Central Zone Cultural Centre, Nagpur. The participation of states in more than one zonal cultural centre according to their cultural linkage is a special feature of the composition of the different zonal centres.

INDIRA GANDHI NATIONAL CENTRE FOR ARTS

One of the major achievements in the field of arts and humanities in India was the establishment of a national institution of great significance, the Indira Gandhi National Centre for the Arts, to commemorate the memory of Indira Gandhi. The Centre, launched on 19 November 1985, will comprise a number of halls including a symphony concert hall, a national theatre, two museums, building for cultural archives focussing attention on the rich and varied oral traditions of Asia, a reference library, a fully automated and integrated computerised system for national information system and data bank on the arts, humanities and social sciences and a research and publication wing. Once completed, the Centre will be the biggest and the largest cultural complex in the world.

The academic programmes of the Centre are conceived as interlocked programme of sub-institutions. Each has long-range projects of fundamental importance not only to India but also to Asia and other countries of the Third World.

Amongst the sub-institutions, the reference library and the national information system and data bank, the *Indira Gandhi Kala Nidhi,* is the first of its kind in Asia. The reference library will include major reprography collections of unpublished material in manuscripts on palm leaves, birch, wood, leather, paper spread all over the world. The library has received gifts of valuable collections of eminent scholars like late Dr Suniti Kumar Chatterjee, Thakur Jaidev Singh, Krishna Kripalani and also from foreign countries like Federal Republic of Germany, France, etc. It has also acquired sizeable collections of rare books, manuscripts and micro-fiche. Alongside is the establishment of a computerised slide library of the artistic traditions of the world.

An integrated computerised system as a total configuration with appropriate hardware and software will form the national information system and data bank. It has developed five data bases: *CAT-CAT*—on information on catalogues; *Manus*—descriptive information of manuscripts of the *Gita Govinda, Meghaduta* and *Natyashastra; Sound*—information on Vedic chantings; *Pitco*--information on 2D and 3D art objects. Research and development projects on optical storage and retrieval system, desk-top publishing system and transliteration have been undertaken. The Cultural Archives Division of the *Kala Nidhi* comprises personal collections of scholars, artists, eminent personalities like Raja Lala Din Dayal, Lance Dane, Snil Janah, etc.

The second sub-institution of the Centre, the Research and Publication Division, *the Indira Gandhi Kala Kosha,* has launched four projects. The first being preparation of a list of 250 basic terms, *Kalatattvakosa,* a glossary of basic terms of Indian world-view, arts and science. Under the project *Kalamulasastra,* it has also undertaken to publish fundamental texts on Indian artistic traditions. A preliminary list of about 60 Sanskrit texts, eight Arabic-Persian texts, two Pali texts, one anthology in Prakrit has been drawn up and it proposes to bring out at-least five texts shortly. The third project undertaken is to reprint works of pioneering scholars in European languages which have remained inaccessible to English-speaking Indian readers. As a first step, Stutterheim's *Rama Legend* has been translated from original German into English and is being published by the Centre. *The Selected Letters of AK Coomaraswamy* compiled and edited by Alvin Moore is also being published by the Centre. UNESCO has also agreed to provide financial assistance to the fourth project, the *Encyclopaedia of Arts.*

Another sub-institution of the Centre, *The Indira Gandhi Janapada Sampada,* is the Division of tribal and folk arts. To complement the *Kala Nidhi* cultural archives programme, it has initiated action to acquire documentation on lifestyle and living traditions. As a first step, it has acquired sizeable collections of audio tapes, slides on the ritual arts of Kerala and Karanataka of Balan Nambiar, and Maria Terese Dutta's collection of tapes on Kumoun music. It also plans to establish a tribal and folk art museum with two permanent galleries. The first is *Adidrsya,* for which the rock cave paintings of Dr Yashodhar Mathpal, pre-historian and painter of Bhimbeteka caves are being acquired. The other gallery, *Adisravaya,* will contain musical instruments and will concentrate on sound and music of *adivasis.* Also, with a view to evolving alternate models for studying the cultural phenomenon as lifestyle, function, rhythm and art in its totality, two field research projects in respect of Santhals and the other in Jodhpur have been initiated. Area study programmes for inter-disciplinary, study research, documentation through audio-visual records and cassettes in two areas, the Vraj and the Nathedwara complex and the other in Thanjavur with the Brihadesvara Temple as the focus of attention have also been undertaken.

The fourth sub-institution is the *Indira Gandhi Kala Darshana* which will provide the venue and forum for a living dialogue amongst the arts, countries and continents. It has organised an international exhibition entitled *Kham,* space and the act of space, and an international seminar called *Cidakasa Bhutakasa,* inner and outer space. The results of the exhibition and seminar are being put together through a video documentary on the exhibition and a publication based on the presentations at the seminar.

INDIA IN WORLD HERITAGE

The World Heritage Committee, constituted by the UNESCO under the provision of the International Convention for the Protection of the World Cultural and Natural Heritage had recommended the inscription of 13 cultural monuments and four natural sites from India in the World Heritage list. These include (a) cultural monuments—Ajanta caves; Ellora caves; Agra Fort; Taj Mahal; the Sun Temple at Konark; monuments at Mahabalipuram: churches and convents of Goa; monuments at Khajuraho; monuments at Hampi; monuments at Fatehpur Sikri; monuments at Pattadkul; Elephanta caves and Brihadesvara Temple at Thanjavur; (b) natural sites—Kaziranga National Park; Manas Wildlife Sanctuary; and Keoladeo National Park and Sunderabans National Park.

NATIONAL COUNCIL FOR CULTURE

The National Council for Culture (formerly National Council of Arts) was set up on 19 September 1983 by the Government for coordination of activities of institutions of arts, archaeology, anthropology, archives, museums and for providing guidelines for future plans and programmes of various institutions.

CULTURAL RELATIONS

The Department of Culture has been actively pursuing a policy of cultural cooperation with many countries in the world through a system of bilateral agreements and exchange programmes. While the cultural agreements lay down the broad principles of cooperation, these are implemented through cultural exchange programmes of 2-3 years' duration. At present, India has cultural agreements with 77 countries and 2-3 years' cultural exchange programmes with 52 countries.

FESTIVAL OF INDIA

A Festival of India was first held in UK in 1982. Its objective was to bring to the outside world glimpses of the richness and variety of India's cultural heritage as also to show aspects of contemporary India. The programmes comprise exhibition, performing arts, cinema and symposia, thus encouraging the participation of a large number of people and a range of experiences.

Two more festivals were held in 1985-86; one in France and the other in the United States. The emphasis in France was on the performing arts and the cinema, with a few carefully chosen exhibitions, including the first ever exhibition on Indian architecture held in a foreign country. In the United States, a large number of exhibitions and symposia took place in addition to performing art events and cinema. A number of organisations sponsored local or associated events under the festival banner and towards the end of this 18 months-exposition, the Festival of India had covered over 100 cities and 15 crore people through actual events, and television and media coverage.

The fourth Festival of India was inaugurated in the USSR on 3 July 1987. It lasted one year and was the largest ever festival in terms of scope and number of participants, culminating with a closing ceremony on 8 July 1988. The festival created an awareness in the Soviet mind of Indian cultural heritage along with its contemporary development and achievements. It also generated enormous enthusiasm and appreciation for each others' culture on a very large scale among the people of the two countries.

The Festival of India also organised "Indian Manifestation" in Sweden in August-December 1987. The Festival of India in Japan was inaugurated with a concert of classical music and dance on 15 April 1988.

7 Scientific Research

INDIA has had a long and distinguished tradition in science from accomplishments of ancient times to great achievements during this century; the latter half prior to independence, has been related largely to pure research carried out in educational institutions. At the time of independence, our scientific and technological infrastructure was neither strong nor organised in comparison with those of the developed world. This has resulted in our being technologically dependent on the skills and expertise available in other countries during the early years of independence. In the past four decades, an infrastructure and capability largely commensurate with meeting national needs has been created minimising our dependence on other countries. But we still have a long way to go in this field to be self-sufficient. A range of industries from the small to the most sophisticated has been established covering wide areas of utilities, services and goods. There is now a reservoir of expertise well acquainted with the most modern advances in basic and applied areas that is equipped to make choices between available technologies, to absorb readily new technologies and provide a framework for future national development.

SCIENCE AND TECHNOLOGY INFRASTRUCTURE

Scientific research in India is carried out under three major sectors, *viz.*, the Central Government, the state governments and the various in-house research and development units of industrial undertakings, both under the public and the private sectors. The bulk of the research effort in the country is financed by major scientific agencies such as the Departments of Science and Technology, Atomic Energy, Space, Scientific and Industrial Research, Electronics, Non-Conventional Energy Sources, Environment, Ocean Development, Biotechnology, Indian Council of Medical Research, etc. There are about 200 research laboratories within the purview of these major scientific agencies carrying out research in different areas. Besides, there is a large number of scientific institutions under the Central ministries/departments which carry out research programmes of practical relevance to their areas of responsibility. The states supplement the efforts of the Central Government in areas like agriculture, animal husbandry, fisheries, public health, etc, The institutions of higher education carry out sizeable work in the field of science and technology and are supported by the University Grants Commission and the Central and state governments. They also carry out sponsored research projects financed by different agencies.

A number of incentives are being provided by the Government to industrial establishments in the private and the public sectors to encourage them to undertake research and development activities. Consequently, scientific research is gaining momentum in many of the industrial establishments. As on January 1988 there were over 1,000 in-house research and development units in the public and private sectors which were recognised by the Department of Scientific and Industrial Research.

SCIENCE POLICY

The science policy of the Government of India based on the Scientific Policy Resolution adopted by the Parliament on 4 March 1958, lays stress on the Government's responsiblity to secure for the people the benefits from the acquisition of scientific knowledge and practical application of research. It is also the Government policy to encourage individual initiative for dissemination of knowledge and to foster programmes to train scientific personnel to fulfil the nation's needs in the fields of science, education, agriculture, industry and defence. In the national priorities, science and technology has been recognised as major instruments for achieving national goals of self-reliance through economic and multifaceted socio-cultural development. New Departments of Environment, Ocean Development, Non-Conventional Energy Sources, Scientific and Industrial Research and Biotechnology have been set up to deal with nationally important and newly emerging areas that call for significant science and technology inputs. Significant achievements have been recorded as a result of the policy.

TECHNOLOGY POLICY STATEMENT

The technology policy statement announced in January 1983 is in response to the need for guidelines to cover a wide-ranging and complex set of related areas keeping in mind the capital-scarce character of a developing economy. It aims at ensuring that country's available natural endowments, especially human resources, are optimally utilised for a continued increase in the well-being of all sections of the people. Technological advancement is sought to solve the country's multifarious problems and to be able to safeguard its independence and unity. Among its objectives are attainment of technological competence and self-reliance, provision of gainful employment, making traditional skills commercially competitive, ensuring maximum development with minimum capital, modernisation of equipment and technology, conservation of energy, ensuring harmony with environment, etc.

To evolve instruments for implementation of the technology policy, the Government set up in June 1983 a Technology Policy Implementation Committee. On completion of its tenure in mid-1987, it has given way to a new autonomous body designated as Technology Information Forecasting and Assessment Council (TIFAC). It has been constituted for strengthening the national capabilities in the area of technology forecasting and assessment and to provide the Government with independent policy options and advice. Working under the Department of Science and Technology, the Council monitors technological developments in India and abroad.

EXPENDITURE

The expenditure on research and development and related scientific and technological activities has increased from Rs 4.68 crore in 1950-51 to Rs 1,890.58 crore in 1984-85 and was estimated to be of the order of Rs 2,900 crore in 1986-87. The Seventh Plan outlay for the science and technology sector is Rs 7,535 crore compared to the Sixth Plan outlay of Rs 3,716 crore. An idea of expenditure on scientific research and development at the national level as also the outlays for the science and technology sector over the successive Plan periods is given in tables 7.1 and 7.2.

TABLE 7.1 EXPENDITURE ON SCIENTIFIC RESEARCH AND DEVELOPMENT AND RELATED ACTIVITIES

(Rs crore)

Sector	Expenditure on Research and Development		
	1984-85	1985-86	1986-87
Central Sector	1,510.77	1,752.04	2,289.25
State Sector	168.77	219.93	258.21
Private Sector	233.19	251.94	318.11
Total	1,912.73	2,223.91	2,865.57

TABLE 7.2 PROGRESS OF EXPENDITURE IN PLANS

(Rs crore)

Details	Plan	Non-plan	Total
First Plan	14	6	20
Second Plan	33	34	67
Third Plan	71	73	144
Fourth Plan	142	231	373
Fifth Plan	693	688	1,381
Sixth Plan	2,064	1,652	3,716
Seventh Plan	4,398	3,137[1]	7,535

[1] Estimated

APEX ADVISORY BODY

The Science Advisory Council to the Prime Minister, an apex advisory body with a tenure of two years, considers a variety of items keeping in view the national priorities, *e.g.*, New Education Policy, Drug Policy, Minerals Policy, Technology

Forecasting Mechanisms, Report of the Committee on Indian Scientists and Technologists working abroad, Project TIES, issues like health of science in India and Perspective Plan-2001 AD. It has initiated a number of studies in some of the new and emerging areas like instrumentation, parallel computing, materials, chemical industry, photonics, robotics, management of land and water resources and priorities in genetic research in India; it has also examined plans for the various Technology Missions and other S and T programmes of high plan priority.

SCIENCE AND TECHNOLOGY ADVISORY COMMITTEES

Science and technology plays a key role in the development of an economy. In order to integrate science and technology in the economic sectors and also to analyse introduction of appropriate technology, a science and technology advisory committee in each economic ministry has been proposed. Currently 19 ministries have set up such committees.

The committees are *inter-alia* required to make technology plan in the concerned ministry and also to frame out programmes in order to absorb and adapt technologies. A nodal committee named as Inter-Sectoral Science and Technology Advisory Committee has been set up in the Department of Science and Technology to identify and address cross-sectoral problems. The Committee draws membership from all economic sectors as also from the Council of Scientific and Industrial Research, Indian Council of Agricultural Research, Planning Commission, etc.

SCIENCE AND TECHNOLOGY

The Department of Science and Technology (DST) which was set up in 1971 has been assigned the responsibility of formulating policy statements and guidelines on science and technology; promoting new areas of science and technology; undertaking or financially sponsoring scientific and technological surveys, research, design and development, supporting national research institutions and scientific bodies. It also coordinates all activities relating to international science and technology collaborations except in specific areas assigned to other agencies. It deals with the promotion of and support to indigenous technology, disseminates scientific and technological information and coordinates multi-institutional inter-disciplinary activities in areas of science and technology. It also provides secretarial support to the Science Advisory Council to the Prime Minister, the National Science and Technology Entrepreneurship Development Board, the National Council for Science and Technology Communcation and the Technolgoy Information Forecasting and Assessment Council.

Over the years, the Department has made sustained efforts to promote and accelerate the development of science and technology in areas relevant for societal application, coordination of inter-disciplinary multi-institutional programmes and providing support to academic and other research institutions for carrying out basic and applied research. The Department has been catalytic and instrumental in identifying, formulating and implementing a large number of programmes with the help of the expertise available within the country and abroad, in frontline emerging areas such as biotechnology, materials, plasma physics, etc. These programmes are ultimately expected to yield results of direct relevance to national development.

PROMOTION SCHEMES

The two existing promotion schemes, *viz.*, General Research Scheme and Science and Engineering Research Council have been integrated into one, *i.e.*, R and D funding mechanism. The broad objectives of this scheme are: (i) to promote research in newly emerging and frontline areas of science and engineering including multi-disciplinary fields, and (ii) to selectively promote the general research capabilities in relevant areas of science and engineering, taking into account existing research capabilities of the host institutions.

As a part of promotional programme, emphasis has also been given to encourage participation of younger scientists in science and technology activities by providing them support for creative research through project support, and for participation in international conferences. Besides, they are provided opportunities to interact with eminent scientists through contact programmes. As a part of this scheme, a new programme has also been initiated to support young research workers who have extra spark of originality and motivation.

SCIENCE AND SOCIETY-RELATED SCHEMES

The Department has specific programmes to promote science and technology and its application to benefit specific disadvantaged groups. These are: (1) Scheme for Young Scientists; (2) Science and Technology Application for Rural Development; (3) Science and Technology for Women; (4) Science and Technology for Weaker Sections, and (5) Utilisation of Scientific Expertise of Retired Scientists. The sixth scheme, 'Better Opportunities for Young Scientists' in chosen areas of science and technology was initiated in 1986 for building national capability in selected frontline areas through training of talented youth under the guidance of pioneering experts at reputed international centres and utilising their talent to further expand the expertise base of our institutions.

SUPPORT FACILITIES

The specially designed programmes on this objective relate to: (1) assistance to professional bodies, learned societies and science academies; (ii) support for organising national and international seminars; (iii) support for participation of Indian scientists in major international scientific conferences; (iv) setting up of regional sophisticated instrumentation centres; (v) long-term support to scientific research institutions, and (vi) assistance to states and union territories to establish councils for science and technology.

Long-term institutional infrastructural requirements for science and technology are met through the creation of autonomous and independent structures under the overall umbrella of the Department. The states are also encouraged to set up secretariats and councils for science and technology which act as focal points for planning, coordinating and promoting science and technology activities. The councils for science and technology or departments of science and technology have been set up in nearly all the states and union territories.

ENGINEERING TECHNOLOGY PROGRAMMES

The engineering and technology schemes cover research and development activities related to industrial, social, regional and consumer requirements in addition to research in frontline areas. The applied research is sponsored in close cooperation with industry and user agencies to build up competence in various sectors and to achieve self-reliance. Major activities under the scheme are: (i) Thrust area programmes—research and development projects are being encouraged and supported in the areas of: (a) membrane separation processes, (b) development of electrical materials, (c) lubrication technology, (d) irrigation and water management and (e) robotics. (ii) Newer fibres and composites initiated in 1975—this programme has centered around development of specific fibres and resin systems along with development of equipment and setting up of regional test laboratories and is now directed towards introducing polymers and their composites into industry through design, development and manufacture of specific products. The projects cover areas of: (a) polymer alloys, (b) application as bio-materials, (c) wider application for rehabilitation aids, (d) scale-up of impregnating pitch, (e) specific applications in two-wheelers, four-wheelers, automobiles, marine vessels and aircraft, and (f) commercialisation of terephthalamide fibre. (iii) Cyrogenics and ceramics—work on design, fabrication and testing of liquid nitrogen plant of 10 litres per hour is continuing till the technology gets commercialised in 1991. An integrated programme on design, development and fabrication of a liquid helium plant to meet indigenous conditions and requirements will be supported until it is commercialised in 1994, and (iv) National coordination of testing and calibration facilities—this programme has been formulated essentially to ensure and improve the quality of industrial products, provide consumer protection and promote export of industrial goods. The objectives of the scheme are: establishment of accreditation/ recognition by the Central Government of testing facilities in various sectors; setting up heirarchy of calibration laboratories and promotion of testing and calibration facilities to improve the national needs. About 200 laboratories are expected to be accredited soon.

TECHNOLOGY SYSTEMS

TECHNOLOGY PROMOTION SCHEME

The Technology Promotion Scheme aims at technology modernisation/ upgradation of industry/skills, specially that of relevance to the small scale and cottage sectors of industry, besides sponsoring technology forecasting/policy studies of interest to DST. This involves preparation of the proposals in consultation with experts and its support by DST or undertaking the activity in coordination with inter-institutional mechanisms. The theme of such projects normally focuses on its application/relevance to the respective areas/industries. A number of projects covering areas like microprocessor—based low cost automation, continuous forming of helicoidal flights by rolling, development of expert system for Homoeopathy and Ayurvedic systems of medicine, etc., were supported.

CONSUMER PROTECTION

The scheme was conceived to enhance consumer satisfaction through availability of better quality items of mass consumption. The areas covered under the scheme involved identification of quality affecting parameters, proto-type development and consumer education. The projects supported under the programme cover quality improvement through new S and T inputs, GLS lamps, electrical plugs/switches/sockets, starters and ballasts of tubelights, safety-match boxes, fabric washing powders/syndets, edible oils, pencils and sharpeners, textile fabrics, etc.

INITIATION OF TECHNOLOGY MISSIONS

The scheme was worked out to help in the identification of new mission areas in addition to the existing six technology missions *viz.*, immunisation, oilseeds, telecommunications, drinking water, literacy and dairy development. Some of the new missions to be identified may be tied up with the existing ones to act as a catalyst/supporting sub-mission.

NATIONAL SUPER-CONDUCTIVITY PROGRAMME

Coordinated efforts are underway towards the development of stable and engineering use of high temperature (liquid nitrogen or higher) super-conductivity materials, wires, thin films etc., and its applications.

HIGH TECHNOLOGY ACQUISITIONS

The policy issues for acquisition of high technology are being formulated under this programme through inter-ministerial dialogues, as a follow-up work to the technology policy statement.

INSTRUMENT DEVELOPMENT PROGRAMME

DST has been identified as the nodal agency for undertaking national programme on instrument development involving users, industry and R and D centres. In order to formulate, coordinate and implement these programmes an Instrument Development Cell was established in DST in 1975. The objectives of the programme are to promote design and development of instruments leading to indigenous production and to promote instrumentation culture in the country. The Instrument Advisory Committee consisting of members from user agencies, industry and R and D organisations has been constituted to guide the activities of the Cell.

The Department has played a catalytic role in supporting the S and T activities in design and development of high-tech instruments through multi-institutional and multi-disciplinary programmes. Initial programmes were confined to development of opto-electronic instruments and solar energy measuring instruments. As a result of these efforts, a number of instruments *viz.*, audio-visual systems, optical pantograph, profile projector, sunshine recorder, pyranometer, etc., have been developed and are under regular production in Central Electronics Ltd., Sahibabad and National Instruments Ltd., Calcutta. The second phase programmes have resulted in the development of sophisticated scanning electron microscope and infrared spectrophotometer.

The Instrument Advisory Committee identified instruments in four critical areas *viz.*, analytical, geo-scientific, agro-electric and laser and laser-based instruments to be developed during the Seventh Plan. Substantial work has been completed with regard to design and prototype fabrication of as many as 15 instruments.

ENTREPRENEURSHIP DEVELOPMENT BOARD

The National Science and Technology Entrepreneurship Development Board, established in 1982, has been devoting attention to providing increasing opportunities of gainful self-employment for science and technology persons since its inception. Some of the major programmes initiated are: (a) organisation of entrepreneurship development programmes; (b) creation of entrepreneurial awareness through camps; (c) setting up of science and technology entrepreneurs' parks; (d) establishment of entrepreneurship development cells in academic institutions; (e) setting up of task forces in selected backward districts for identifying resources, skill and need-based entrepreneurial opportunities for local S and T persons; (f) training teachers from colleges and universities in the development of entrepreneurship skills; (g) introduction of entrepreneurship in course curricula of engineering degree, diploma and science courses; (h) encouraging group employment schemes, and (i) bringing out publications, videos and related material.

The main focus of the activities of the Board has been on promotion of entrepreneurship in small scale sector by S and T persons. About 456 new units have been set up through these measures. It has also been consistently promoting close interaction between academic institutions and industries to bring about upgradation in products, processes and equipment and also for commercialisation of indigenous technologies. In addition, about 2,600 jobs have been created on a sustained basis.

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY COMMUNICATION

The National Council for Science and Technology Communication (NCSTC), comprising representatives from Central and state governments, mass media, voluntary agencies, etc., has prepared detailed plans for popularisation of science and technology and growth of scientific and technological temper among people. The different areas that NCSTC focussed attention on include training in S and T communication; S and T communication information system comprising, among other things, a data-base resource-letters for communicators in different Indian languages and a newsletter for science clubs; development and dissemination of S and T communication software (all media); field projects involving a large number of people in S and T communication activities; national awards for science popularisation; research in S and T communication, and coordination with other agencies in S and T communication.

NATIONAL RESOURCES DATA MANAGEMENT SYSTEM

It is a multi-disciplinary and multi-agency project aimed at generating computer compatible spatially oriented data bases of natural resources and socio-economic parameters to facilitate area specific micro-level planning. It was launched in 1982 and aims at developing and operationalising a scientific methodology for management of data on natural resources which is responsive to the modern management needs. Experimental data bases have been set up in five districts, namely, Gurgaon (Haryana), Sultanpur (UP), Kheda (Gujarat), Koraput (Orissa) and Vishakhapatnam (AP) Five more data-base centres are in the offing. Application projects indentified to demonstrate the utility of these data bases relate to themes like management of water and land resources, monitoring of poverty alleviation programmes and location of services and amenities.

EARTH SCIENCE PROGRAMMES

DEEP CONTINENTAL STUDIES

The project is aimed at using modern geological, geophysical and geochemical tools to obtain information on the deep structure of the Indian lithosphere. At the first instance, a transect running from Jaipur to Raipur has been selected to carry out integrated field and laboratory studies. Projects relating to magneto-telluric and magneto-variation, geological mapping and remote-sensing studies have been approved for support. In addition, laboratory investigations to determine high pressure temperature characteristics and mathematical modelling of geophysical data form important components of this project.

DEEP SEA FANS OF BAY OF BENGAL

This programme has been recently launched with a view to studying the geological, geomorphological, structural and geophysical setting of deep sea fans and is expected to throw light on the nature of the oceanic crust and various events in the evolution of the Himalayas. Organisations like Geological Survey of India, Oil and Natural Gas Commission, Indian Institute of Geomagnetism, National Institute of Oceanography and other concerned universities are participating in the programme.

ALL-INDIA COORDINATED PROJECTS

SEISMOLOGY

This programme was initiated during the Sixth Plan and is continuing during the Seventh Plan. The infrastructure, *e.g.*, the seismic stations and strong motion seismic networks under the project at various locations in the Himalayan belt, has been generated and some of the recent events have been successfully recorded making many significant contributions in the area of seismicity and seismotectonics of the Himalayas. The studies being pursued are expected to enhance our knowledge of earthquake mechanism, seismic risks, design codes and mitigation of earthquake hazards.

HIMALAYAN GLACIOLOGY

A multi-institutional and multi-disciplinary coordinated project has been initiated during 1986 for studying snow-cover mapping, glacial inventory, hydrometeorological and hydrological, geological and geomorphological aspects of the glaciers. The project involves eight R and D institutions besides the Himalayan states. During 1987, a glacial expedition to Chhota Sigri Glacier was organised and some geological, meteorological, hydrological and geophysical data collected. These studies will be helpful in evaluation of snowmelt/glacial-melt contribution in the northern river system.

AIRD ZONE RESEARCH

This multi-institutional coordinated programme was launched in 1987 to enhance the productivity of land, man and animal in the arid land regions of the country with application of S and T. Projects ranging from monitoring the process of desertification, establishment of natural resource data bases, sand-dune dynamics to surface and groundwater inter-relationship are being supported.

MONSOON THROUGH BOUNDARY LAYER STUDY

Under this programme, data will be collected at sites covering continuously moist, periodically moist and mainly dry regions of the monsoon by using both conventional and modern techniques, like instrumented meteorological tower, doppler sodar, tether-sonde, mini-radiosonde radiometer, etc. Studies, using these and other conventional data will lead to understanding of dynamics of the monsoon, the vagaries of which are intimately related to rainfall distribution in north India.

SEVERE LOCAL STORM STUDY

This project has been prepared with the objectives of understanding the genesis, development, movement, etc., of thunderstorms leading to realistic thunderstorm modelling under Indian conditions. This study will also help in parameterisation of convective processes in regional and global circulation model as well as for improving the present capabilities of weather forecasting particularly for aviation.

TROPICAL OCEAN AND GLOBAL ATMOSPHERE PROGRAMME

This project is being launched as part of the international programme and includes deployment of data buoys, XBT lines, additional tide gauges, etc., and exchange of specified meteorologial and oceanographic data with the participating countries. It will lead to improved understanding of oceanographic and atmospheric processes and air-sea interaction mechanism over the tropical oceans and to develop reliable climate model relevant to our country. It will also help in increasing our capabilities for forecasting the monsoon and cyclones.

WEATHER FORECASTING

Aimed with the objective to inform and guide the farmers well in advance about the various farming activities to be undertaken by them in view of the expected weather, a National Centre for Medium Range Weather Forecasting with super-computing and other necessary facilities is being established. As a part of the programme, 127 Agromet Field Units in different agro-climatic zones will be established from where agro-meteorological advices will be issued to farmers for their more efficient agricultural operations. A super computer system has been commissioned in New Delhi for this purpose. The Department of Science and Technology is acting as a nodal agency for implementation of the project in cooperation with India Meteorological Department, Indian Council for Agricultural Research, Ministry of Information and Broadcasting, Department of Agriculture and other relevant departments of the states.

INTERNATIONAL COOPERATION

International collaborations were pursued with a view to gaining through interaction with other countries in areas of mutual interest, establishment of contacts with scientists and institutions, to open new avenues for further interaction, provide/receive expert assistance through bilateral linkages, enhance flow of S and T information through interaction between scientists and laboratories in other countries.

During 1987-88, a number of new initiatives took shape. These included: signing of integrated long-term programme of cooperation in S and T between India and USSR in July 1987; new instruments of collaboration in S and T with the Philippines, Venezuela and Mongolia. The Indo-US cooperation in SandT gained further momentum under the auspices of the Indo-US Sub-Commission in SandT and the Science and Technology Initiative (STI). While the Sub-Commission sponsored activities were financed out of the US-India Rupee Fund, the joint research under STI was financed by both the governments.

The Indo-French Centre for Promotion of Advanced Research has been set up in New Delhi jointly by Governments of India and France. It aims at promoting joint research in thrust areas of national relevance to both the countries. The Centre commenced its activities in 1987. The Scientific Council of the Centre, comprising experts from both the countries, identified thirteen areas for joint research.

NATIONAL SURVEYS AND OTHER INSTITUTIONS

SURVEY OF INDIA

The Survey of India, Dehra Dun prepares topographical and geographical maps of the country on various scales, needed for survey support for development and defence. It has undertaken several field and topographical surveys on various scales for developmental projects, such as irrigation, power communication, flood control, water supply, forestry, coal fields, etc. It participates in various scientific research programmes related to geodesy, geophysical studies including tidal predictions, indigenisation of surveying instruments and equipment, etc., and also actively engaged in remote-sensing applications in mapping. It advises the Government on all survey matters *viz.*, geodesy, photogrammetry, cartography, reprography, demarcation of the external boundaries of India and their depiction on maps. It is the national agency responsible for standardisation of geographical names. Aerial photography of the whole country is also coordinated by it.

In the process of modernisation, it has introduced latest survey technologies and is actively involved in generating computerised systems for creating national survey data and information network and laying the foundation for digital computerised cartography. Collaborations in scientific studies are carried out at national as well as international levels.

The Survey and Training Institute, Hyderabad imparts training to Indian nationals and those of neighbouring countries in various disciplines of surveying and mapping.

NATMO

The National Atlas and Thematic Mapping Organisation (NATMO), Calcutta is a premier cartographic institution engaged in compilation of various maps depicting the physical and other socio-economic conditions of India. National atlas maps on various themes in Hindi, English and other regional languages have already been published or are under different stages of publication. It has undertaken digital mapping with the help of computers and is proposing to undertake mapping of the resource potentials of the entire country for helping the development planners and academicians.

INDIA METEOROLOGICAL DEPARTMENT

The India Meteorological Department (IMD), founded on an all-India basis in 1875, is the national agency for providing services in the field of meteorology. Data is collected from over 1,400 observatories of different types, including data collection platforms, and are processed by it. The IMD along with the Indian Institute of Tropical Meteorology (IITM), Pune conducts fundamental and applied research in different fields of meteorological instrumentation, radar meteorology, seismology, agricultural meteorology, hydro-meteorology, satellite meteorology and air pollution. The IITM has been conducting cloud seeding experiments for producing rain artificially.

The Indian Institute of Astrophysics (IIA), Bangalore, the Indian Institute of Geomagnetism (IIG), Bombay and the IITM, Pune which were formerly a part of the India Meteorological Department, have been functioning as autonomous institutes since 1971. The IIA conducts research in solar and stellar physics, radio astronomy, cosmic radiation, etc. The IIG records magnetic observations and conducts research in geomagnetism.

IMD provides grants to certain universities/academic institutions to encourage research in atmospheric sciences and various facets of monsoon circulation. It also funds monsoon research by a centre in the Indian Institute of Technology, Delhi. A monsoon activity centre was established at New Delhi under the World Meteorological Organisation Programme.

The Department has a positional astronomy centre at Calcutta which compiles and publishes the *Indian Ephemeris* in English and *Rashtriya Panchang* in Hindi, Sanskrit and nine other Indian languages.

Meteorological and weather services are provided by the IMD from its headquarters at New Delhi and functional offices responsible for climatology and forecasting at Pune. There are five regional meteorological centres at Bombay, Calcutta, Madras, Nagpur and New Delhi. For better coordination the the states, meteorological centres have been set up in 12 state capitals *viz.*, Ahmadabad, Bangalore, Bhopal, Bhubaneshwar, Guwahati, Hyderabad, Jaipur, Lucknow, Patna, Srinagar, Trivandrum and Chandigarh. To render service to agriculturists, weather bulletins are issued daily since 1945 from the meteorological centres relating to their regions and give district-wise forecasts of weather and warnings against adverse weather. The agro-meteorological advisory service centres established at Madras, Pune, Calcutta, New Delhi, Bhopal, Chandigarh, Srinagar, Patna and Bhubaneshwar issue meteorological adivisory bulletins to farmers once or twice a week. Flood meteorological offices have been working at ten different centres to provide meteorological support to the flood forecasting organization of the Central Water Commission. Tourism departments at the Centre and states have access to the meteorological centres for weather information of interest to tourists. A number of tourism meteorological offices are functioning in Jammu and Kashmir.

The Department issues warnings against heavy rainfall, strong winds and cyclonic weather for the general public and a number of private and public organisations including aviation, defence services, ships, ports, fishermen, mountaineering expeditions and agriculturists. One hundred disaster warning system receivers have been installed in the disaster-prone coastal areas of north Tamil Nadu and south Andhra Pradesh.

Cyclone warnings to ports and ships are issued by Bombay, Calcutta, Vishakhapatnam, Bhubaneshwar and Madras offices. These are based on conventional meteorological observations from coastal and island observatories, ships in the Indian seas, coastal cyclone detection radars and cloud pictures received from weather satellites. Cyclone detection radar stations are located at Bombay, Goa, Cochin, Bhuj, Calcutta, Madras, Karaikal, Paradip, Vishakhapatnam and Machilipatnam. Weather satellite pictures transmitted by the Indian National Satellite (INSAT-IB) are received at the main data utilisation centre at Delhi and processed and transmitted to the users. A cyclone warning and research centre at Madras investigates problems exclusively relating to tropical cyclones.

Meteorological data is exchanged with many countries through high speed telecommunication channels. As part of India's cooperation with the World Weather Watch Programme of the World Meteorological Organisation, a regional meteorological centre and a regional telecommunication hub functions at New Delhi. An area forecast centre is also located in New Delhi under the plan of the International Civil Aviation Organisation.

IMD participates in Indian scientific expeditions to Antarctica and scientific cruises of the oceanographic research vessel, *ORV Sagar Kanya*. A permanent meteorological observatory has been established at *Dakshin Gangotri* in Antarctica, which functions round the year.

ATOMIC ENERGY

India, today, is recognised as one of the countries most advanced in the technology of atomic energy. Also, she is in a leading position in the production of source material in this frontline technology. The country is now self-reliant in nuclear technology and is capable of operating complete nuclear fuel cycle. The Atomic Energy Commission was set up in 1948 to formulate a policy for all atomic energy activities in the country. The Department of Atomic Energy (DAE) was set up in 1954 as executive agency for implementing the atomic energy programme.

NUCLEAR POWER

A three-stage nuclear energy programme was envisaged to use the country's uranium and vast thorium resources. The first stage started with natural uranium-fuelled pressurised heavy water reactors (PHWRs) producing power, and plutonium as a by-product. The second stage will have plutonium-fuelled fast breeder reactors producing power and plutonium and uranium-233 from thorium. The third stage reactors will be based on the thorium cycle producing more uranium than they burn. The DAE aims at establishing 10,000 MWe of nuclear power generating capacity by 2000 AD which would then represent about 10 per cent of the total electrical generating capacity in the country.

To implement nuclear power generation programme on commercial lines, the Nuclear Power Board was converted to the Nuclear Power Corporation of India Ltd. (NPCIL). The Corporation started functioning since 18 September 1987 and was formally inaugurated on 16 October 1987. NPCIL is at present operating three nuclear power stations—Tarapur Atomic Power Station near Bombay, Rajasthan Atomic Power Station at Rawatbhata near Kota and Madras Atomic Power Station at Kalpakkam near Madras. The fourth nuclear power station is at an advanced stage of construction at Narora in Uttar Pradesh. The first unit attained criticality in March 1989. Construction work on the fifth 2 × 235 MWe nuclear power station at Kakrappar near Surat in Gujarat is also in progress. It is expected to be commissioned in December 1989. Work has also commenced on two more 2×235 MWe each stations at Kaiga in Karnataka and Rawatbhata in Rajasthan. The Tarapur Atomic Power Station uses enriched uranium-fuelled light water cooled reactors known as boiling water reactors while all the subsequent stations use natural uranium-fuelled heavy water moderated and cooled reactors (PHWR). Detailed design and engineering of 500 MWe PHWR systems are in progress. Work on six 500 MWe PHWR units is proposed to be commenced during current Seventh Plan.

HEAVY WATER PROJECTS

There are five heavy water plants at Vadodara (Gujarat), Rawatbhata (Rajasthan), Talcher (Orissa), Tuticorin (Tamil Nadu) and Thal (Maharashtra), besides a small heavy water plant at Nangal (Punjab). Two more heavy water plants are being set up at Manuguru (Andhra Pradesh) and Hazira (Gujarat). The Rawatbhata, Thal, Manuguru and Hazira plants are based on indigneous technology, developed at Bhabha Atomic Research Centre, which uses hydrogen sulphide as the feed material.

ATOMIC MINERALS

The Atomic Minerals Division is one of the first units started by the Atomic Energy Commission (AEC). With its headquarters at Hyderabad, it is now a multi-disciplinary organisation entrusted with exploration, prospecting and related research and development activities for atomic mineral resources required for the nuclear power programme.

NUCLEAR FUEL

The Nuclear Fuel Complex, Hyderabad fabricates nuclear fuel for power reactors and produces zircaloy products and seamless stainless steel tubes. It also produces certain special materials for critical industries and high purity materials needed by electronic industries. The complex consists of different plants for the conversion of yellow cake into ceramic grade natural uranium oxide, enriched uranium hexafluoride into enriched oxide, zircon sand to zircaloy components through stages of zirconium oxide, zirconium sponge and zircaloy billets, etc., uranium dioxide to sintered and ground pellets and finally to fuel assemblies. Production of components, such as blanket fuel containing thoria pellets, nickel and steel reflector assemblies and special assemblies required for fast-breeder test reactor and prototype fast breeder reactor form part of the fuel fabrication programme. The special materials plant at the complex is a unique facility in the country for production and supply of 4n and 5n purity materials required for electronics and other industries. Plants have also been set up for the production of seamless steel tubes and other special tubes. Job order for conversion of the billets to the requisite sections and mother pipes to finished tubular products for special applications are executed for private and government organisations. A full-fledged quality control laboratory caters to the needs of in-process and final quality control of components and materials supplied. Special control measures are ensured for effective effluent management.

RESEARCH AND DEVELOPMENT

Research and development work in the field of atomic energy and allied fields is being carried out at three research centres, namely the Bhabha Atomic Research Centre at Trombay, Bombay, the Indira Gandhi Centre for Atomic Research, Kalpakkam, Tamil Nadu and the Centre for Advanced Technology, Indore, Madhya Pradesh.

BHABHA ATOMIC RESEARCH CENTRE

The Centre was set up in 1957 as the Atomic Energy Establishment, Trombay. In memory of its founder it was renamed in 1967. It is the premier national centre for research and development work in nuclear energy and related disciplines. The facilities available at Trombay include research reactors CIRUS (40 MWt) and APSARA (one MWt). In May 1984 a zero energy fast critical facility (PURNIMA-II), using U-233 as fuel became operational. Besides, a 5.5 MeV *Van-de-Graff* accelerator is also available for experimental research in physics. A large research reactor DHRUVA (100 MWt) has been built indigenously. In collaboration with Tata Institute of Fundamental Research, the Centre set up a 14 MV pelletron accelerator, which started commercial operation during this year. In addition to the various laboratories for carrying out research in physics, chemistry, biology, agriculture, medicine, food technology, nuclear engineering, isotope technology, metallurgy, etc., the Centre also has Uranium Metal, Uranium Fuel Fabrication Plant and Fuel Reprocessing Plant. It has set up a Beryllium Plant and a Radio Pharmaceuticals Laboratory (ISOPHARM) at Vashi. Fuel Reprocessing Plant and Nuclear Waste Vitrification Plant at Tarapur are also parts of BARC. The Variable Energy Cyclotron Centre at Calcutta is a national facility for advanced work in nuclear chemistry, production of isotopes for various applications and radiation damage studies on reactor materials. The

Seismic Station at Gauribidanur near Bangalore set up in 1965, helps in the detection and identification of underground nuclear explosions. The Nuclear Research Laboratory at Srinagar and the High Altitude Research Laboratory at Gulmarg in Kashmir conduct research in atmosphere physics and cosmic ray physics.

BARC activities cover a wide range of areas such as physics, chemistry, engineering, metallurgy, fuel reprocessing, fuel fabrication, radioisotopes, waste management, electronics instrumentation, lasers, biology, agriculture, food technology, radiation medicine, etc. The Centre has developed a number of technologies, some of which have been transferred to industry for commercial exploration. The Radiation Medicine Centre at Bombay uses radioisotopes for diagnostic and therapeutic applications. In the field of radio-pharmaceuticals, production facilities exist at Vashi, Bangalore and Hyderabad. BARC also conducts a country-wide personnel monitoring service for evaluating radiation exposure of workers in institutions using radiation sources.

INDIRA GANDHI CENTRE FOR ATOMIC RESEARCH

Indira Gandhi Centre for Atomic Research was set up in 1971 at Kalpakkam (Tamil Nadu) to carry out research and development in the fast breeder reactor technology. The major facility at the Centre is an indigenously constructed 40 mw (thermal)/ 13 mw (electrical) fast breeder test reactor which attained criticality in October 1985. The reactor core uses indigenously developed mixed carbide fuel. It is a major step in the country's nuclear power programme. It has paved the way for using our vast thorium resources. The Centre is drawing up plans to design and build a 500 MWe prototype fast breeder reactor.

CENTRE FOR ADVANCED TECHNOLOGY

The Centre has been set up in 1984 at Indore, Madhya Pradesh to spearhead research in high technology fields such as fusion, laser and accelerators. A Synchrotron Radiation Source, being set up at the Centre, will be a major research facility in the country.

BOARD OF RADIATION AND ISOTOPES TECHNOLOGY

To run the activities related to radiation and isotopes technology on commercial lines, a Board of Radiation Isotopes Technology (BRIT) was set up on 1 March 1988. Radioisotopes and related equipment have been produced indigenously at Trombay for use in medicine, agriculture and industry. About 400 radioactive products and labelled compounds are produced and every year about 50,000 consignments of radioisotopes and equipment are supplied to users in the country and abroad. The radioisotopes are used in a number of diseases, industrial radiography, development of high-yielding and disease-resistant mutant of rice, wheat, groundnut, pulses, etc. A commercial radiation sterlization plant (ISOMED) at Trombay provides sterilization services to the medical industry in the country.

ATOMIC ENERGY REGULATORY BOARD

It is functionally an autonomous body reporting to the Atomic Energy Commission. Set up in 1985, it carries out regulatory and safety functions, as envisaged under the Atomic Energy Act, 1962, covering all the DAE and radiation installations operated by medical, industrial and research users in the country.

CRISIS MANAGEMENT GROUP

Formed in October 1987, the Group is responsible for ensuring that each of the DAE nuclear installations is adequately prepared and equipped to deal with any emergency involving radiation/conventional hazards which may arise at such installations and during transport of radioactive consignments.

PUBLIC SECTOR UNDERTAKINGS

There are three public sector undertakings under the administrative control of DAE, *viz*., the Indian Rare Earths Limited (IRE), the Uranium Corporation of India Limited (UCIL) and the Electronics Corporation of India Limited (ECIL).

IRE is functioning since 1950. It has two mineral sand separation plants at Manavalakurichi and Chavara and a Rare Earth Plant at Alwaye, all in Kerala. It has also set up a Rs 130 crore project at Chhatrapur, Orissa, known as Orissa Sand Complex for production of various minerals and value added products. It is also managing a Thorium Plant at Trombay.

Electronics Corporation of India Ltd. was set up at Hyderabad in 1967 to manufacture electronic systems, instruments and components developed at BARC. It has pioneered the production of a varied range of sophisticated electronic systems, instruments and components, based primarily on indigenous technology.

Uranium Corporation of India Limited, formed in October 1967, is responsible for mining and milling of uranium ore. It is operating uranium mines at Jaduguda and Bhatin and indigenously designed uranium mill at Jaduguda. It has set up uranium recovery plants at Surda, Rakha and Mosaboni. A by-product recovery plant has also been set up to recover accessory minerals such as copper, magnetite and molydbenum. The mill at Jaduguda was expanded in 1987-88 to treat increased quantity of ore. The existing uranium mine at Jaduguda is being deepened to mine ore located in deeper levels. Four new projects have been taken up for implementation and consist of modernisation of uranium recovery plant at Mosaboni and upgradation of effluent treatment system at Jaduguda.

With a view to meeting the increasing demand of uranium for nuclear power reactors, the Company has prepared project report for setting up uranium mines at Narwapahar and Turamdih and uranium mill at Turamdih, all in Bihar. Other identified uranium deposits are at Bodal in Madhya Pradesh and Bagjata and Turamdih West in Bihar.

FINANCIAL SUPPORT

The Department has been funding substantially autonomous and scientific institutions under its administrative control like the Tata Institute of Fundamental Research, Bombay; Tata Memorial Centre, Bombay; Saha Institute of Nuclear Physics, Calcutta; Institute of Physics, Bhubaneshwar and Institute of Mathematical Science, Madras.

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

It was founded in 1945 as a centre for pursuit of fundamental research in mathematics, theoretical physics, cosmic rays and nuclear physics. The research activities of the Institute have now expanded to areas such as astronomy and astrophysics, chemical physics, molecular biology, solid state physics, solid state electronics and computer science. The facilities being operated by the Institute are the balloon facilities at Hyderabad, the Radio Astronomy Centre and the National Image Processing Facility for Astronomy at Ootacamund (Tamil Nadu) and 500 MHz FT NMR national facility at TIFR, Bombay. In addition, it manages the activities of Homi Bhabha Centre for Science Education at the Basic Dental Research Project.

TATA MEMORIAL CENTRE

Located at Bombay, Tata Memorial Centre comprises the Tata Memorial Hospital and the Cancer Research Institute. The Centre is the foremost in the country in education, comprehensive care of cancer patients and cancer research. The hospital is a post-graduate centre affiliated to the Bombay university.

SAHA INSTITUTE OF NUCLEAR PHYSICS

The Institute was formally opened in January 1950 at Calcutta. It provides facilities in advanced research in the field of experimental and theoretical nuclear physics, solid state, atomic and molecular physics, plasma physics, high energy physics, crystallography, molecular biology, biophysics, nuclear chemistry and instrumentation.

INSTITUTE OF PHYSICS

Incepted in 1974, the Institute of Physics, Bhubaneshwar was a registered society funded by the Government of Orissa. Since 1985, it became one of the fully aided institutes of DAE. It provides facilities in advanced research in the fields of theoretical solid state, nuclear and high energy physics and experimental solid state physics. It is acquiring a three mw tamdem pelletron accelerator for experimental research in atomic, nuclear, solid state and applied physics.

INSTITUTE OF MATHEMATICAL SCIENCE

The Institute of Mathematical Science, Madras provides facilities for research in mathematics, high energy physics, statistical mechanics and stochastic processes, besides other related academic activities.

The Department of Atomic Energy has also been the main source of funding to the Mehta Research Institute, Allahabad, where the main thrust is on combinatorial mathematics, related computer science, digital electronics and corresponding basic mathematics. Financial assistance is also given to the National Board for Higher Mathematics.

BOARD OF RESEARCH IN NUCLEAR SCIENCE

The Board of Research in Nuclear Science of the Department encourages research in science and engineering and considers for support research schemes in the areas related to the Department.

INTERNATIONAL COOPERATION

India has been offering training facilities, fellowships, scientific visits, etc., and makes available the services of its scientists for expert assignments both through the International Atomic Energy Association and the countries with which she has entered into bilateral agreements for cooperation in the field of peaceful uses of nuclear energy.

SPACE RESEARCH

The Indian Space Programme is directed to the goal of self-reliant use of the space science and technology for national development, its main thrust being: (i) satellite communications for various national uses; (ii) remote sensing for resources survey and management, environmental monitoring and meteorological services and (iii) development and operationalisation of indigenous satellites and launch vehicles for providing these services.

ORGANISATION

The Indian Space Programme began in 1962 with the creation of the Indian National Committee for Space Research (INCOSPAR). In 1969, the Indian Space Research Organisation (ISRO) was set up. The ISRO and the Physical Research Laboratory (PRL) functioned as autonomous agencies supported mainly by the Department of Atomic Energy (DAE). Later, these organisations were brought within the ambit of the Space Commission and the Department of Space (DOS) was created in 1972. The National Remote Sensing Agency (NRSA), an autonomous registered society, was transferred to the DOS in 1980. The INSAT-1 Space Segment Project was also organised in 1977 under DOS.

The role of the Space Commission includes framing of policy, approval of the space programme budget and implementation of national policy in all matters concerning space research. The ISRO is responsible for the planning, programming and management of research and development activities in the country in space science, technology and applications. The PRL conducts research programmes in space-related sciences and the NRSA develops and uses modern remote sensing techniques for resources management. The ISRO, PRL, NRSA and the INSAT-1 Space Segment Project function under the aegis of DOS. The ISRO Council and ISRO headquarters provide overall direction to the scientific, technological and management tasks of the ISRO centres and units.

SPACE APPLICATIONS

INDIAN NATIONAL SATELLITE SYSTEM

The first generation Indian National Satellite System (INSAT-1) represents India's first step towards implementing operational space systems for identified national requirements. The INSAT-1 is a multi-purpose operational satellite system for domestic long distance telecommunications, meteorological earth observations and data relay, nationwide direct satellite TV broadcasting to augmented community TV receivers in rural areas and nationwide radio and TV programme distribution for rebroadcasting through terrestrial transmitters.

The INSAT-1B satellite was successfully launched in August 1983 and was put into operational service in October 1983. All the four services from the spacecraft are being continually utilised by the user agencies.

The INSAT-I system was envisaged with a twin satellite space segment comprising a primary spacecraft and an active on-orbit spare. However, following the loss of INSAT-1A in September 1982, INSAT-IB became the prime satellite. To serve as the back-up for INSAT-1B, the DOS had ordered INSAT-1C spacecraft. INSAT-IC was launched by the Ariane launch vehicle in July 1988. And in order to keep the continuity of INSAT-1 services till the second generation indigenously built INSAT satellites are deployed, a fourth satellite in the series, INSAT-1D has also been ordered.

Presently, 76 telecommunication earth stations are in operation in INSAT-1B network, providing some 4,230 two-way voice or equivalent circuits over 101 routes. The two high-power, S-band transponders in INSAT-1B are utilised by Doordarshan for national networking, sustaining the operations of low-power TV transmitters and for area specific direct augmented TV receivers. Two hundred and fifty TV transmitters in the country receive national programme feed via INSAT-1B. Presently, some 4,000 community TV sets are deployed in various parts of India for direct reception of INSAT-1B TV transmission.

The Meteorological Data Utilisation Centre (MDUC) in New Delhi is fully operational. The MDUC processes the meteorological data from the INSAT-1B Very High Resolution Radiometer (VHRR) as well as information from Data Collection Platforms. As on 31 May 1988, VHRR on board INSAT-1B was commanded to give more than 21,200 images. The INSAT-1B VHRR instrument joined the small and select group of geostationary VHRR instruments that have completed five years of continuous satisfactory operation without any failure or exercise of redundancy. Twenty-two secondary data utilisation centres (SDUCs) are now operational, receiving real-time INSAT-1B VHRR data processed by MDUC. The initial set of 100 data collection platforms for collection of meteorological, hydrological and oceanographic data from remote and uninhabited locations, has been installed. The INSAT-I spacecraft will be replaced by indigenously developed INSAT-II satellites which will eventually be launched from India. Work on the INSAT-II test spacecraft, to precede the operational series, has been initiated. The INSAT-II space segment configuration is based on three identical, multi-purpose spacecraft two of them co-located at the primary orbital position and one at the secondary slot. Each spacecraft will have larger service capabilities than the INSAT-I satellites. The first INSAT-II (test) satellite is expected to be launched in mid-1990 and the second a year later.

INDIAN REMOTE SENSING SATELLITE

The 980 kg IRS-IA is the first in the series of operational, remote sensing Indian satellites. The satellite was put into a 904 km polar sub-synchronous orbit from the Soviet Union on 17 March 1988. The IRS data products are now available in a routine manner from the National Remote Sensing Agency (NRSA), Hyderabad. More than 25,000 imageries over the Indian sub-continent have already been obtained covering the country five times. The quality of imageries compare very favourably with the presently operating state-of-art remote sensing satellites of other countries. It will provide data on agriculture, forestry and hydrology, besides aiding in crop inventory and forecasts, forest mapping and damage detection, studies covering land use/land coverage mapping, land degradation and desertification, wasteland mapping, soil mapping, flood mapping, etc. The IRS-IA constitutes a major element of National Natural Resources Management System. The payload of IRS-IA consists of three state-of-the-art observation cameras using charge-coupled devices as detectors. Each of the three cameras will provide data in four spectral bands, three of which are in the visible region and the fourth in the near infrared. A comprehensive programme has been drawn up for the effective utilisation of data available from IRS-IA. A further series of improved spacecraft for earth observaton will follow IRS-IA.

REGIONAL REMOTE SENSING SERVICE

Five regional remote sensing service centres (RRSSCs) are being set up for processing remotely sensed data. The centres at Dehra Dun, Bangalore, Jodhpur and Nagpur are already operational. The centre at Kharagpur is underway. Another centre for the north-eastern region is planned at Shillong. DOS will manage these regional centres initially. The backbone of the RRSSCs as well as the associate centres are a digital image analysis system primarily for handling satellite acquired terrain multi-spectral data.

SPACE TECHNOLOGY

LAUNCH VEHICLE

As a follow-up to SLV-3, India took up a project for developing the Augmented Satellite Launch Vehicle (ASLV). The five-stage, all solid fuel ASLV with two strap-on boosters is designed to inject 150 kg satellite into low earth orbit. The ASLV employs a host of new technologies, of which the closed loop guidance is instrumental in achieving the precision needed to inject the satellite into a 400-km near circular orbit. The first developmental flight of ASLV took place on 24 March 1987. But the vehicle could not put SROSS-1 satellite into orbit because of a malfunction in the first stage motor of the launch vehicle. However, it validated a number of new technology elements relating to the launch vehicle, spacecraft, launch complex and ground stations. The second developmental flight ASLV-D2 which took place on 13 July 1988 also resulted in a failure. Detailed failure analysis is being carried out using the voluminous data collected during the flight.

The Polar Satellite Launch Vehicle (PSLV) is India's third generation launch vehicle being developed to place 1,000 kg class operational remote sensing satellites into a sun-synchronous polar orbit. Unlike its all-solid stage predeccessors, PSLV will make use of both solid and liquid fuel stages to generate adequate thrust and control capability to precisely orbit the satellites into 1,000 km observation altitudes. The PSLV will have six strap-on boosters.

The Rohini Sounding Rocket Programme supports rocket meteorology upper atmospheric research and flight systems development through sounding rocket flights from TERLS, SHAR and Balasore Rocket Launching Stations.

SATELLITE TECHNOLOGY

The Stretched Rohini Satellite Series (SROSS) Programme is for the development of 150-kg class satellites to be launched by ASLV. The SROSS-1 mission is intended to monitor the launch vehicle performance, validate in-orbit operation of spacecraft mainframe elements and carry out a scientific experiment to study gamma ray bursts. The SROSS-2 will carry out a joint ISRO-DFVLR (West German Space Agency) remote sensing experiment with West German Monocular Electro Optic Stereo Scanner (MEOSS) payload. SROSS-3 is expected to carry out aeronomy experiments proposed by PRL and NPL. SROSS-4 mission will involve an ISRO-TIFR joint experiment using x-ray payload.

LAUNCH SUPPORT AND RANGE FACILITIES

Launch support and range facilities for ISRO missions are provided by the ISRO Range Complex (IREX). It comprises the facilities at SHAR, TERLS and the

Balasore Rocket Launching Station, ISRO Telemetry, Tracking and Command Network (ISTRAC), with its headquarters at Bangalore, operates the tracking network to support various satellite missions of ISRO. ISTRAC comprises TTC ground stations at Sriharikota, Bangalore, Ahmadabad, Lucknow, Trivandrum and Mauritius, a down range station at Car Nicobar and the satellite tracking and ranging station (STARS) at Kavalur, Tamil Nadu. The ISTRAC/TTC stations provide tracking support for Indian launch vehicles and satellites as well as for NDAA and Landsat spacecraft. A multi-mission satellite control centre is located at Bangalore. The INSAT master control facility at Hassan, Karnataka, carries out the operation and maintenance of INSAT satellites in orbit.

SPACE SCIENCE

Research in the space sciences is based at the Physical Research Laboratory (PRL), with significant research and development being carried out by the Space Physics Laboratory (SPL) at VSSC and the Technical Physics Division (TPD) at ISAC. The near-earth environment, upper atomosphere and sun-earth relationships are some of the main areas of interest. Importance is also given to research in cosmic rays, astrophysics, infrared astronomy, meteorites, lunar samples, geocosmophysics and plasma physics. The Udaipur Solar Observatory focuses on research in solar physics. In addition, research in space sciences is also supported in several institutions by the multi-agency Indian Middle Atmosphere Programme and the Advisory Committee for Space Sciences.

SPONSORED RESEARCH

Under sponsored research called 'Respond' initiated in 1976, more than 200 research and development projects have received support in about 80 institutions, universities, research centres and IITs, regional engineering colleges and a few industries, in areas related to space science, technology and applications. The space technology cell at IIT, Bombay is primarily for research in remote sensing; the space technology cell at IIT, Madras will concentrate on R and D in the areas of launch vehicle technology, space communication techniques, the development of advanced chemicals and polymers for space applications.

TECHNOLOGY TRANSFER

More than ten years ago, ISRO commenced dissemination of knowhow to industries to market the spin-offs of the national space efforts. Over the years, the transfer of technology to Indian industry has intensified. ISRO also provides consultancy services to the industrial and technology sectors of the country and symbiotically utilises the expertise and infrastructure available with these sectors for obtaining goods and services as well as developing new technologies required for the space effort. More than 130 products and processes have been transferred to industry. In addition 120 new items are in the pipeline for technology transfer. The knowhow tansferred to industry so far covers chemicals, polymers, special materials, instruments, telecommunications, TV equipment, electronic sub-systems, electro-optic hardware, computer software and special purpose machines.

SPACE CENTRES AND UNITS

The centres and units of ISRO provide the forward thrust in all the fields of endeavour in space science, technology and applications. Each major developmental project of the programme is coordinated by a lead centre of ISRO, drawing major participation from the centres and units, apart from industry, academic and other national institutions.

The Vikram Sarabhai Space Centre (VSSC) at Trivandrum, the largest of the ISRO centres and the main technology base of the programme, primarily provides the thrust for indigenous launch vehicle technology. The SLV-3 was designed and developed by VSSC and so were the ASLV and PSLV. The VSSC also supports TERLS, India's international sounding rocket range and manages ISRO's Rohini Sounding Rocket (RSR) programme. The RSR programme coordinates development, production and launch of the Rohini series of sounding rockets for upper atmospheric and meteorological research. VSSC has advanced mechanical, chemical, material and electronic facilities to meet the fabrication, simulation and testing needs of the on-going projects and programmes. An ammonium perchlorate plant is located in Alwaye, Kerala. VSCC's new extension, the Valiamala complex has originated from the major needs of the PSLV. Beyond ASLV and PSLV, the next major step of VSSC will be the development of the geostationary launch vehicle (GSLV) with the cryogenic upper stage to launch the indigenous second generation INSAT-II spacecraft.

The ISRO Satellite Centre (ISAC), Bangalore is the satellite technology base of the Indian space programme. It is responsible for the implementation of indigenous spacecraft projects for various scientific, technological and application missions. To this end, the Centre has been carrying out design, fabrication, testing and management of satellite projects and has successfully completed eight spacecraft projects.

The SHAR Centre, encompassing the Sriharikota Island in Andhra Pradesh on the east coast of India is the main operational base of ISRO and runs ISRO's satellite launching range. The Centre includes ISRO's range complex (IREX), static test and evaluation complex (STEX), solid propellant space booster plant (SPROB), SHAR computer facilities (SCOF), programme planning and evaluation group (PPEG), SHAR central designs, reliability and quality assurance group and Sriharikota common facilities (SCF). IREX comprises the SHAR launch complex as well as TERLS and Thumba and the Balasore rocket launching station. STEX and SPROB constitute ISRO's largest static testing and solid propellant production facilities.

The primary tasks of Space Applications Centre (SAC), Ahmadabad are to conceptualise, plan and execute projects and conduct research leading to practical applications of space technology. The SAC's main areas of activity are satellite based telecommunications and TV, remote sensing for natural resources survey and management, environmental monitoring, meteorology and geodesy. SAC has contributed significantly to the development of application payloads for ISRO's remote sensing and communication spacecraft, the utilisation of ground systems and the application techniques for satellite communications and remote sensing.

The Liquid Propulsion System Centre (LPSC) with the divisions at Bangalore, Trivandrum and Mahendragiri, is responsible for the design, development and supply of liquid propulsion control packages and engines for launch vehicles and satellites. The LPSC is equipped with precision and special fabrication, integration and test facilities. The test facilities for testing liquid propellant rocket engines are located at Mahendragiri in Tamil Nadu.

Development and Educational Communication Unit (DECU) at Ahmadabad in close cooperation with Doordarshan, Ministry of Information and Broadcasting, is responsible for the production of developmental and educational TV programmes, related research and training especially in support of INSAT services.

The National Remote Sensing Agency (NRSA), Hyderabad, an autonomous registered society, utilises modern remote sensing techniques for assistance in the planning and management of the country's natural resources and provides operational support to various users. It has equipment for surveying, identifying, classifying and monitoring several types of earth resources. The main centre is located at Balanagar and the satellite earth station in the Shadnagar complex. The Indian Institute of Remote Sensing (IIRS), Dehra Dun is a part of NRSA and is the main training centre for remote sensing applications and aerial photo interpretation techniques.

The Physical Research Laboratory (PRL) at Ahmadabad, a grant-in-aid institute of DOS, is the premier national centre for research in space and allied sciences. The main research programmes are in solar planetary physics, infrared astronomy, geocosmophysics, theoretical physics including climatology, plasma physics and laboratory astrophysics, archaeology and hydrology. It also manages Udaipur Solar Observatory.

ELECTRONICS

The electronic industry in India was nucleated in the late forties with setting up of production base for radio receivers by a few private firms using foreign collaborations. In the initial stages, the production activities were mainly in the field of consumer electronics and certain type of components. Two public sector units, namely, Bharat Electronics Limited and Indian Institute of Technology, both at Bangalore, were also manufacturing professional electronic items to meet the requirements of P and T. Introduction of transistor radio in early 60s led to a phase which witnessed steady growth in production of import substitutions, diversification of product range and entry into export market.

Production of electronic equipment and components has come a long way since the days of radio receivers in the 1940s. The electronic industry in India has grown with domestic demand, as a result of import substitution efforts. The production of electronics which was worth about Rs 15 crore in 1960 increased to Rs 3,855 crore in 1986. The value of production for the year 1987-88 is Rs 5,285 crore and it is estimated at Rs 7,085 crore in 1988-89.

STRATEGY FOR DEVELOPMENT

During the 70s electronic industry in the country derived its strength as a labour-intensive industry. Production volume was low as the industry was getting off the ground. The production techniques had large manual labour content. Dispersal of industry was given an important place in the promotional policy framework and industrial capacities were approved based on the estimated demand over the next five years. In the growth and development of the industry, emphasis was placed on indigenisation and applications of electronics. While on one hand, this had enabled development of largely self-reliant consumer electronic industry (except from 1982 onwards when a policy decision was taken to introduce colour TV and resulted in import of CTV tubes and semiconductors required for assembly), it has generated enough demand of components to enable mass production using some degree of automation on the other hand.

PRODUCTION BASE

The production base for electronic industry consists of 11 Central public units with 26 manufacturing plants, 60 state public units (including wholly-owned subsidiary companies), about 400 organised private sector units and over 2,000 small scale units manufacturing various electronic items. It is, however, noticed that the main contribution to production (accounting for about 75 per cent of the total output) comes from 300 major units of which over 100 units are in the small scale sector. During the past few years the contribution of the public units in the overall production of electronics is around 30 per cent, that of small scale sector is about 35-40 per cent and the remaining 30-35 per cent is contributed by units in the organised private sector.

PROFILE OF PRODUCTION

The production in electronics had shown a growth rate of over 30 per cent during 1987. In terms of value, it was Rs 4,720 crore in 1987 compared to Rs 3,460 crore during 1986 and Rs 2,660 crore during 1985. The growth rate achieved during 1987 was 36.4 per cent compared to 30.1 per cent during 1986 and 40.7 per cent during 1985. Amongst the high growth sectors have been the areas of consumer electronics, communication industry and the electronic components industry.

Sectorwise production of electronics and growth rates of various sectors during 1986, 1987 and 1988 is summarised in table 7.3.

TABLE 7.3 PRODUCTION OF ELECTRONICS

Sl. No.	Sector	Growth (Rs crore)			Growth Rate (percentage)		
		1986	1987	1988	1986	1987	1988
1.	Consumer Electronics	1,275	1,820	2,400	23.8	42.7	31.9
2.	Control Instrumentation and Industrial Electronics	525	685	935	30.0	30.5	36.5
3.	Computer Systems	280	375	486	80.6	33.9	29.6
4.	Communication and Broadcasting	504	710	900	32.6	40.8	26.8
5.	Aerospace and Defence	222	300	390	13.3	35.1	30.0
6.	Electronic Components	510	700	1,025	24.4	37.2	46.4

EXPORTS

Along with increase in production, exports of electronics are also on the rise. Over 40 per cent of the exports is contributed by units in Santacruz Electronic Export Processing Zone (SEEPZ) and Free Trade Zones at Kandla in Gujarat and Falta in West Bengal. From domestic tariff area (DTA), export of software has been the major activity where special thrust is being given. From a mere Rs 3 crore of export of electronic items in 1968, a spiral performance of Rs 475 crore has been achieved in 1988. Export of electronic components has emerged as one of the single largest sector, which accounted for Rs 108 crore in 1988, followed by computer software for Rs 85 crore. A separate Electronics and Software Export Promotion Council has now been set up. The major export markets for Indian electronics are the USA, USSR and the Far Eastern countries.

INVESTMENT IN ELECTRONICS

The investments in various sectors are flowing steadily and a number of major projects in the area of communication, computers, components, etc., have started production. In the consumer electronic sector, the main investment has been in the area of CTV receivers. In the communication sector, investments have been made for manufacturing EPABX, RAX, telephone instruments, electronic teleprinters, etc. In the computer industry, major investments are for production of microprocessor-based systems, personal computers, peripherals, floppy disks, super, mini and mainframe computers. For a number of components like colour picture tube, TV glass shells, colour TV components, hybrid circuits, resistors, capacitors, ferrites, PCBs, etc., very substantial investments have been made.

POLICY MEASURES

A number of specific steps have been taken to accelerate the growth of electronics in the country. The basic thrust of the policy is general rationalisation of the licensing policy, with an emphasis on promotion rather than on regulation. By and large, no upper limit is prescribed on capacity and no restrictions of a sectoral nature like large scale, small scale, private sector, public sector, etc., are prescribed except where specific reservations are made on very special considerations. Achieving economies of scale with up-to-date technology is the major objective of this sector. Specific policy measures taken recently in this sector are: (a) 'broadbanded' licenses for a number of categories; (b) delicensing of electronic components industry; (c) permision for import of technology and foreign collaboration in all areas of electronics; (d) encouragement to development of small scale industry; (e) de-reservation of certain components, which were earlier reserved for the small scale sector; (f) exemption to MRTP companies in almost all areas of electronics, including consumer electronics, from clearance under Section 21 and 22 of MRTP Act; (g) private sector units have been permitted to manufacture telephones, EPABX, teleprinters, fascimile equipment, data communication terminals, etc; (h) a new software policy implemented to encourage production and export of software; (i) import duly on raw materials, components and capital equipment has been reduced; (j) rationalisation of import policy with a view to increasing production, and (k) promotion of appropriate applications of electronics to improve productivity, quality, safety and quality of services.

TECHNOLOGY DEVELOPMENT

Between 1973 and 1987, the Department of Electronics has spent over Rs 63.5 crore involving 400 projects in the area of technology development. These projects have been assigned to over 100 organisations involving R&D laboratories (over 100 projects), educational institutions (about 200 projects) and public sector industrial units (about 100 projects). About 275 projects have already been completed. For 50 projects in R&D laboratories and academic institutions, knowhow has been transferred to production agencies. Many of the projects sponsored in industrial units have gone into production of electronic systems incorporating latest technologies, while the others have helped to build R&D culture and specialist manpower in the area of electronics.

CENTRE FOR DEVELOPMENT OF TELEMATICS (C-DoT)

C-DoT was set up in August 1984 with the objective of developing a state-of-the-art, Digital Switching System (DSS) suitable for Indian environment with capability for future introduction of ISDN. The family of Digital Switching System includes Private Automatic Branch Exchange (PABX), Rural Automatic Exchange (RAX), Main Automatic Exchange (MAX) and Trunk Automatic Exchange (TAX) which are in a variety of configurations from 128 to 40,000 ports. Design and development of PABX and RAX versions of terminal module of the C-DoT main switch has been completed. RAX is a self-contained system meant for rural areas and was put on field trial in Kittur in Karnataka during July 1986.

TESTING FACILITIES

The Department of Electronics has launched a Standardisation, Testing and Quality Control (STQC) Programme. Und the Programme, a countrywide integrated network of testing and calibration, three-I Echelon structure with Electronics Test and Development Centres (ETDCs) working as per Echelon-III level, Electronics Regional Test Laboratories (ERTLs) working as per Echelon-II level, and the Primary Calibration facility at National Physical Laboratory (NPL), New Delhi operating as per Echelon-I level have been in operation. The National Measurement Assurance Programme is also being organised for the electronic discipline that would ensure compatibility and traceability in measurements from industry level to the national level and ultimately to the international level.

At present 15 ETDCs are functioning in various states generally in the proximity of a cluster of small and medium scale industries. Four ERTLs are located in Delhi, Bombay, Calcutta and Bangalore to cater to the requirements in the respective regions.

About 55 manufacturers of colour television have been approved under the limited approval scheme in pursuance of industrial license policy for colour television receivers. Specifications for personal computer system comprising 8-bit personal computer, colour video monitors, floppy disc drive, keyboard and printer, etc., have been finalised with the active involvement of the industry and based upon actual testing wherever applicable. A certification scheme for personal computer, associated peripherals and dedicated components has also been finalised.

India has been admitted as a member under IEC-QA system and all four ERTLs have been enrolled as members of Exchange of Authenticated Electronic Components Performance Test Data (EXACT) Organisation. This has resulted in exchange of data on test report of international products/components, tested by leading international manufacturers' organisations.

GEOGRAPHICAL SPREAD OF THE INDUSTRY

From a situation where a few years ago, electronic industry was essentially concentrated in a few places in the country (Pune-Bombay belt, Bangalore, Hyderabad and surroundings of Delhi), it has now come to be widely disbursed throughout the country. While in 1971, Maharashtra and Karnataka states accounted for 76 per cent of the production of electronic goods and the share of remaining states was only 24 per cent, in 1985 the share of the states has increased to 65 per cent. Over 15 states have set up state electronics development corporations. These corporations are helping in promotion and development of electronics in respective states. Most of the states are now providing special incentives like exemption of sales tax, creation of separate industrial areas for electronics, subsidy for setting up units in backward areas, financial participation either as joint sector or assisted sector, etc., so as to encourage speedy development of this industry.

MANPOWER DEVELOPMENT

Highly specialised and trained manpower and a continuous updating of this manpower stock, are of crucial importance for the growth of electronics. The working group on electronics manpower set up by the Government of India has estimated the total manpower requirement for electronic industry by terminal year of the Seventh Five Year Plan as 5,20,000.

A large number of new institutions in the formal education system have been inducted into computer curricula jointly with the University Grants Commission/Ministry of Human Resource Development/Directorate General of Employment and Training and state governments for developing special manpower for computers. In addition, a number of schemes like faculty development programmes, continuing education programme, instruction material development, etc., are being implemented. Five new courses, namely Master of Computer Applications (MCA), Diploma in Computer Applications (DCA), Diploma in Computer Engineering (DCE) and Certificate Courses for Training of Programme Assistants and Data Entry Operators have been introduced, besides the conventional courses like B Tech and M Tech in computer sciences and technology. By now, the Department of Electronics has supported about 300 such course units at various educational institutions in the country. A new scheme 'DoE Fellowship for Ph D in Computer Science and Technology' has been launched to motivate bright young students to take up research studies in the area of computers. Other specialised training courses include: (i) service technician programme for common products like TV sets, tape-recorders, radios, VCRs, etc.; (ii) teachers' training programme for reorientation/retraining of teachers teaching electronic subjects at various ITIs/polytechnics; (iii) upgradation of course material in electronics for polytechnic level students as well as teachers; (iv) educational aids for handicapped persons; (v) computer literacy and studies in schools, etc.

NATIONAL INFORMATICS CENTRE

National Informatics Centre (NIC) was set up in March 1977 to play a promotional role in creating appropriate information system in Government departments/ministries to catalyse decision-making in Government. The hub of NIC network so far has been large computer system CYBER CDC 170/730 acquired and installed in May 1980 with the assistance of UNDP. The system is connected with 60 interactive terminals and 12 minicomputer terminals. NIC has regional facilities at Bombay, Madras and Calcutta. Comprehensive training of internal programming staff and of the users of NIC facilities has been one of the important activities of the NIC. About 1,000 users are presently availing of the services of the NICNET, 75 per cent of these users belong to Central Government offices and public sector organisations. Nearly 400 Government and 300 non-government projects have been registered with NIC. The NIC host computer system has been operational round-the-clock with an average uptime of 98 per cent. It has successfully completed the installation and commissioning of the Master Earth Station, the hub of the satellite-based communication network. The Master Earth Station antenna was installed and tested with INTELSAT. Thereafter, the installation of remote earth stations at Hyderabad, Madras, Bangalore, Trivandrum, Jaipur, Kavaratti, Bhuvaneshwar, Calcutta and Guwahati was completed and connected with Delhi.

PUBLIC SECTOR UNDERTAKINGS

CMC LTD.

CMC Ltd. provides a whole range of computer support services comprising hardware maintenance, installation and commissioning of system, computer centre service, systems consultancy, software development programmes and research and development. It provides hardware maintenance support to various equipment supplied by over 30 manufacturers. It is coordinating the implementation of project INDONET which is an integrated information management and distributing data processing facility spanning the entire country. Its —consultancy and technical expertise includes applications like: computerisation of railway passenger reservation systems; economic load dispatch management systems for electricity generating units; computerisation of banking operations; automatic message switching systems, ticketless trunk exchange in the field of telecommunications; computerised fingerprint identification systems for the Central and state fingerprint bureaux; crime detection systems for police organisations; computer-based environmental monitoring systems, etc.

ELECTRONICS TRADE AND TECHNOLOGY DEVELOPMENT CORPORATION

Electronics Trade and Technology Development Corporation (ET&T) was set up with objectives of expanding foreign trade in electronics and undertaking development of technology in key areas. In addition, it is responsible for monitoring the requirement of industry and buying in bulk to provide large measure of support to the electronic industry in its growth.

The Corporation has taken up a new innovative programme of self-reliance known as MTB programme with the objective of providing substantial assistance to small scale production units to manufacture cost effective products of contemporary design and conforming to high quality standards. Under the programme, 14 inch black and white TV sets are being manufactured by about 50 units in the country. The *Margdarshan Programme* taken up by ET&T provides software package in the form of educational video tapes for community development, like fundamentals of electricity, safety in electrical works, safety from fire hazards, colour TV, cobbling and film on antenna, etc.

SEMICONDUCTOR COMPLEX LTD

The Semiconductor Complex Ltd. (SCL) was set up with an objective to design, develop and manufacture LSI/VLSIs circuits, modules and sub-systems for telecommunication, data-processing, consumer electronics and for defence/strategic applications. It commenced commercial production in April 1984. It has been able to develop three micron CMOs technology and has productionised the clock LSI devices. With this the die-yield of clock device has been improved to 2,000 dies on a four inch milicon wafer against an average of 800 in five micron CMOs technology. Two clock devices with alarm facility have also been productionised to meet the requirement of clock movement manufacturers. In addition, SCL has started the wafer processing of R 6502 eight-bit microprocessor, R 6522 versatile interface adapter for R 6532 RIOT LSI devices. The production of codec LSI devices has been initiated which are used in electronic exchanges and telecom equipment.

Under modules and sub-systems, SCL manufactures electronic circuit blocks for clocks and analog watches, module for digital electronic watches and Unicom eight-bit module micro-computer. In clock ECBs, they have been able to produce all the components except capacitors indigenously and are manufacturing 15 types of clock ECBs for supplying to various clock movement manufacturers, SCL has set up a facility for assembly of QAB-ECB from component level.

COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH

The Council of Scientific and Industrial Research (CSIR), constituted in 1942 by a resolution of the then Central Legislative Assembly, is an autonomous body registered under the Registration of Societies Act, 1860. The functions assigned to the Council are: (1) promotion, guidance and coordination of scientific and industrial research in India, including the institution and financing of specific researches; (2) establishment or development of and assistance to special institutions or departments of existing institutions for scientific study of problems affecting particular industries and trades; (3) establishment and award of research studentships and fellowships; (4) utilisation of the results of the researches conducted under the auspices of the Council towards the development of industries in the country; (5) establishment, maintenance and management of laboratories, workshops, institutes and organisations to further scientific and industrial research and to utilise and exploit for purposes of experiment or otherwise any discovery or invention likely to be of use to Indian industries; (6) collection and dissemination of information in regard not only to research but also to industrial matters generally; (7) publication of scientific papers and journals, and (8) any other activity or activities to promote generally the objects of the resolution. The Department of Scientific and Industrial Research in the Ministry of Science and Technology provides the administrative link between the Government of India and the CSIR.

CSIR today is an integrated network of 39 research laboratories/ institutes with over 100 regional centres spread all over the country. It carries out research of value not only to industry but also to other sectors of the economy such as agriculture, irrigation, health, mining, power utilities, transport and defence, besides basic research. Its expertise and experience is embodied in 5,000 highly qualified scientists and technologists supported by an additional 13,000 skilled scientific and technical back-up personnel.

CSIR has the expertise to form special inter-disciplinary, inter-laboratory groups to tackle specific research problems; for example, a consortium formed from four CSIR and two foreign organisations is rendering consultancy to ONGC on optimisation of crude flow through submarine pipelines; a group of four CSIR laboratories is rendering consultancy to Coal India for environmental planning and to Central Warehousing Corporation on safe storage and handling of hazardous chemicals.

ASSISTANCE TO INDUSTRY

The inter-disciplinary expertise generated over the years by CSIR helps the industry in various ways. Some of them are: (i) assessment of technology options, including technology assessment and choice of technology; (ii) absorption, adaptation and updating of imported technology; (iii) identification of areas of R and D that will maximise returns including R and D project definition, planning and programming; (iv) productivity improvements through cost reduction, energy conservation and waste utilisation; (v) substitution of imported raw materials, components and processes; (vi) pollution and effluents control, including location of safe discharge points; (vii) repair and maintenance: (viii) trouble shooting, condition monitoring and maintenance scheduling, computer simulation and modelling; (ix) optimisation of construction cost through application of novel technological designs; (x) analysis, interpretation and validation of test results and data; (xi) laying down of standards and test protocols and quality assurance; (xii) survey of literature and state-of-art reports, and (xiii) feasibility studies and project reports and analysis.

ACHIEVEMENTS

Some of the significant achievements of CSIR are: development of an

Application Specific Integrated Circuit chip for the purpose of multi-channel analogue data acquisition by Central Electronics Engineering Research Institute (CEERI), Pilani, development by the Central Scientific Instruments Organisation (CSIO) of a combined Electron Spectroscopy for Chemical Analysis (ESCA), Auger Electron Spectrometer (AES), Ion Scattering Spectrometer (ISS) and Work Function Measuring Unit. The Geological Survey of India sponsored a series of test flights of the NGRI Airbrone Pulse Transient Electromagnetic Induction prospecting system over a zone of possible economic graphite occurrences in Orissa. The anomalies obtained with this airborne tool were confirmed by ground checks, indicating that this device was useful in localising areas for ground search for electrically conducting mining targets as graphite and massive sulphide. As a result of the sustained high quality work of National Institute of Oceanography, Goa, India has become the first country in the world to obtain from the United Nations certain rights for mining of polymetallic nodules in the central Indian Ocean. India now has the exclusive rights for mining 1,50,000 sq km while an equal area has been declared reserved for the International Seabed Authority. A three tonnes per day Butachlor (technical) plant has been commissioned by M/s Montari Industries Ltd. at Ropar in Punjab, based on the process knowhow and basic design provided by Regional Research Laboratory, Hyderabad. Technology for Butachlor has also been released to the Hindustan Insecticides Ltd. (1,000 TPA), the National Insecticides and Chemicals Ltd. Chandigarh (600 TPA), Vantech Pesticides Ltd. Hyderabad (600 TPA), Crop Health Products Ltd. Ghaziabad (500 TPA) and JKBM Ltd. (200 TPA). In collaboration with Hindustan Organic Chemicals Ltd., Rasayani, National Chemical Laboratory, Pune, had developed a process for the manufacture of butenediol. Production of butenediol of desired specification and quality has commenced in the 150 TPA plant of the firm.

Synthetic fatliquors developed at Central Leather Research Institute (CLRI), Madras and based on petro-chemicals using photo-sulfochlorination technology were commercialised by M/s Balmer Lawrie and Co. in 1987. The same firm has gone into trial production of two synthetic tanning agents alcrotan and alutan developed at CLRI. NCL has entered into a collaborative agreement with Hindustan Polymers for joint development and commercialisation (15,000 tonnes per annum with an annual turnover of about Rs 20 crore) of the ethylbenzene technology using the catalyst developed. This is the first process in the world making use of dilute alcohol. This process can also be adapted for ethylene. A noteworthy feature of the process is that there are no process streams needing effluent treatment. Norfloxacin, a drug belonging to a new family of anti-bacterials with quinolones has recently been introduced in the country by CIPLA Ltd. based on the process developed by RRL(H) and further optimized by CIPLA. A process developed by RRL(H) for azido-thymidine (AZT) has been released to CIPLA Ltd. for commercialisation. AZT is the only approved drug for use in AIDS and its present international price is quite high. An agreement has been signed between National Metallurgical Laboratory

(NML), Jamshedpur and Tata Steel for utilisation of a remarkable corrosion inhibitor 'METASAVE' developed by the laboratory. The laboratory scale evalution was followed by plant trials and is now available as NML/Tata Steel joint technology for utilisation in large integrated as well as mini-steel plants. The material is effective in reducing the corrosion rate of a number of metals and alloys in different acidic environments under varying parameters.

A technology for the manufacture of magnesium alloy anodes for cathodic protection has been developed by Central Electro-Chemical Research Institute, (CECRI), Karaikudi. CECRI technologies transferred include aluminium alloy anodes and zinc alloy anodes, and magnesium alloy anodes for Tata Yodogawa, Jamshedpur. RRL, Jorhat installed a 500 kg/batch distillation plant for the benefit of citronella growers at Takyalpat area of Imphal (Manipur) in close collaboration with the Manipur Industrial Development Corporation, Imphal. A high-yielding variety of Java Citronella designated *CIMAP/Bio-13* has been developed by Central Institute of Medical and Aromatic Plants (CIMAP), Lucknow through plant tissue culture. CIMAP has developed a superior clone of lavender CIMAP/B-18, designated *Sher-e-Kashmir.*

An osmo-tolerant and ethanol-tolerant strain of S. cerevisae was developed by IMECH. Large scale fermentation trials were conducted with this strain in collaboration with RRL, Jammu. This yield is considered a significant improvement over the reported 6-8 per cent (v/v) ethanol production prevalent in most Indian distilleries. Improving upon the earlier patented design of beehive oven, the Central Fuel Research Institute (CFRI), Jealgora has successfully commissioned an eight-oven battery of beehive coke ovens in the premises of M/s Brahmdeo Sinha and Co. (Hard Coke), sponsors of the projects at Rajganj near Dhanbad. The newly-designed demonstration plant has a number of distinct advantages over the earlier ovens and is nearly pollution free.

Firedamp, a gaseous mixture constituting 90 per cent methane and ubiquitously present in coal seam, is a veritable source of danger, because its accidental ignition results in tremendous explosion causing loss of life and mine machinery. To eliminate this problem, Central Mining Research Station (CMRS), Dhanbad has successfully developed a technique of draining out this dangerous gas from the coal seams and utilising it as a fuel for cooking. The Central Glass and Ceramic Research Institute, Calcutta has designed, installed and commissioned a rotary regenerator (heat wheel), utilising the principles of "Lungstrom Wheel" for recovery of waste heat from flue gas.

A five kw geothermal pilot power plant operating on a closed loop rankine turbopack system employing trichlorotrifluorothane (R 113) as the working fluid has been developed for installation at Manikaran, Himachal Pradesh by harnessing the energy contained in hot water flowing from borewells drilled in a water-dominated geothermal field. The power plant, initially installed and tested at National Aeronautical Laboratory (NAL), Bangalore is now ready for final installation and commissioning at Manikaran. The National Physical Laboratory, New Delhi has evolved a technique for three-directional weaving with carbon fibres. It has successfully developed amorphous silicon solar cells with 6.5 per cent efficiency over one sq cm area. The composite rudder developed by NAP for a fighter aircraft has just been accepted by the Hindustan Aeronautics Ltd. after stringent quality tests.

On a specific request from the Department of Lighthouses and Lightships of the Ministry of Surface Transport for development of a design for light beacon towers for use along the coastal areas, particularly in the offshore islands of the country, the Structural Engineering Research Centre, Madras has developed a design using thin ferrocement elements, made corrosion-proof by polymer impregnation. A prototype structure was built and successfully tested in the laboratory.

An inter-divisional programme, *Flosolver,* was started in 1986 to assess and develop the use of parallel computing techniques, which proved an extraordinary opportunity for India to be among leaders in developing the associated new technologies. NAL's experience so far with this project has been extremely promising; flow computation times on the eight processor parallel computer built at NAL exceed the times on the available conventional mainframe by almost a factor of two. And the new version of Flosolver could speed up flow computations even by a factor of 10. The automatic visual range assessor (AVRA) system, which finds applications in airports and airfields, automatically measures and reports, every 15 seconds, the meteorological visibility (MV) and the runway visual range (RVR). MV and RVR are crucial parameters which enable a pilot to decide if the visibility conditions, prevailing at the airport he/she is approaching, are suitable for landing. India Meteorological (Deptt.), while qualifying AVRA design as suitable for use in India, observed that the development of AVRA by NAL fulfills a longstanding meteorological requirement for aviation in India and that its performance was superior in many respects to comparable foreign units.

In the area of basic research, significant developments have been reported in super-conductivity (NPL, CEERI, CGCRI); catalysis (NPL, Indian Institute of Petroleum); cellular and molecular biology (Centre for Cellular and Molecular Biology); drug targetting in parasitic diseases (Central Drug Research Institute), and toxicity studies (Industrial Toxicology Research Centre). A national facility for modulation transfer function (MTF) was established at CSIO to meet the testing requirements of space camera lenses.

OCEAN DEVELOPMENT

For centuries, the people of India have been using the seas around the Indian subcontinent for transport, communication and food. During the last few years, the exploration and exploitation of the living and non-living resources of the seas have acquired a new thrust. The new 'Ocean Regime' established by the United Nations Convention on the Law of the Sea, 1982, which has been signed by 159 countries including India and ratified by 34 countries plus the United Nations

Council for Namibia, as of 31 May 1988, assigns much of the world ocean to exclusive economic zones where coastal states have jurisdiction over the exploration and exploitation of resources and for other economic purposes. The wide use of these resources, both living and non-living, now pertaining to the coastal states will require scientific knowledge.

Recognising the importance of the oceans in the economic development and progress of the nation, the Government set up the Department of Ocean Development in July 1981 for planning and coordinating oceanographic survey, research and development, management of ocean data and resources, development of manpower and marine technology. The Department is entrusted with the responsibility of looking after marine environment on the high seas. The policy objectives of ocean development were announced in Parliament in November 1982.

The main thrust areas in the ocean sector have been Antarctic research, promotion of surveys and optimum utilisation of living and non-living resources, harnessing of renewable sources of energy and the exploration of polymetallic nodules from the deep seabed.

The Department has acquired two sophisticated oceanographic research vessels, *ORV Sagar Kanya* (June 1983) and *FORV Sagar Sampada* (November 1984). These vessels are among the most modern oceanographic research vessels with advanced facilities for working in the field of physical, chemical, biological, geological and geophysical oceanography and meteorology. Sagar Sampada is a multi-purpose vessel with long endurance and operational range capable of working in the 200 nautical miles exclusive economic zone of India and beyond and also in the south Indian Ocean up to 65° S latitude to provide good support to India's Antarctic programmes. Within a short span, the Department has made considerable progress and taken steps to enhance the country's capabilities in ocean sciences and has provided inputs to several institutions in the country.

ANTARCTIC RESEARCH

India entered the field of Antarctic research in 1981 and since then, the Department has sent seven scientific expeditions to the continent. The various scientific programmes of Antarctic research include studies in the fields of meteorology, radio wave propagation, geology, geophysics, oceanography, marine biology, microbiology, upper atmosphere chemistry and glaciology. The scientific work is carried out on voyages to and from Antarctica, at the sites of mooring of the ship, at the permanently manned station, Dakshin Gangotri, and at the Schirmacher Hill region. During the seven expeditions a good deal of information, data and material has been collected. By virtue of its scientific activities in Antarctica, India was admitted as a Consultative Member of the Antarctic Treaty of 1959, in September 1983. India became a member of the Scientific Committee on Antarctic Research in October 1984. India also acceded to the Convention on the Conservation of Antarctic Marine Living Resources from 17 July 1985 and participated in the fourth annual meeting of the Commission in September 1985 as observer and as a full member of the Commission in September 1986.

The fourth expedition which sailed from Goa on 4 December 1984 had 83 members, including one scientist from Mauritius. During this expedition, a direct high frequency communication link was established. A small station consisting of three cottages in the hills at a distance of about 70 km from the present permanent station was built. Additional accommodation for laboratory space and garage for parking of snow vehicles and for storage of equipment was added to the permanent station.

The twelve-member first wintering team, which was left behind by the third expedition and which stayed in Antarctica throughout the winter was relieved of its duties and brought back to India. A new team of 13 members was left behind for winter work. The fourth expedition also included a six-member team with the requisite equipment and vehicles for undertaking reconnaissance work preparatory to a South Pole expedition later.

The fifth expedition to Antarctica with a team of 88 members sailed from Goa on 30 November 1985 and landed on 24 December 1985. The scientific component of the expedition had 21 members, including two women scientists, drawn from 12 different institutions. The logistic component consisted of 67 persons from the three Services. The expedition returned after 69 days' stay in the icy continent and after accomplishing the scientific and other objectives. The expedition brought back the second wintering team left behind by the fourth expedition. A 14-member new team consisting of four scientific personnel and 10 from the Services to provide logistic support was left behind for winter work.

The sixth Antarctic expedition sailed from Goa on 26 November 1986 and landed on 21 December 1986. The scientific component of the team consisted of 18 personnel for the summer work and six for the winter work. As in the past, the logistic support was provided by the personnel from the three Services. The performance of a windmill at the Maitri station during the summer for generation of energy was under study during the period of this expedition.

The seventh expedition to Antarctica returned to Goa on 26 March 1988 after spending 70 days on the continent and leaving behind a 15-member team. Among its major achievements were geological survey of over 1,000 square kilometre and collection of the rock samples from the Humboldt Massif and Wohlthat mountain ranges; investigation of the ozone hole phenomena; foundation pillars were laid for the second permanent station at Maitri and one block was completely structured. The building is targetted to be completed during the next expedition. A post office was inaugurated at Dakshin Gangotri on 26 January 1988.

The eighth expedition sailed off in *MV Thuleland* from Marmagao port on 28 November 1988. The expedition comprises 100 scientists and defence personnel for varied research and logistic support. The expedition will construct the second station Maitri located 70 km away from Dakshin Gangotri. Its objectives include logistics and scientific activities, consisting of maintenance of the station at Dakshin Gangotri, completion of the construction of the new station at Maitri for which foundation laying work was accomplished in the seventh expedition. The scientific activities will include work related to geology, geophysics, meteorology and upper atmosphere physics, studies on ozone depletion, oceanography and geomagnetism. Monitoring and the study of icebergs and search for meteorites in Antarctica will also be undertaken.

The purpose and objective of the Antarctic research is to identify and initiate studies and programmes which are of significance in scientific and economic terms and to establish infrastructural facilities and expertise which would enable India to sustain and expand its activities. Successful commencement of the Antarctic programme has brought many Indian scientific institutions on a common platform and enabled India to participate and contribute effectively in international negotiations on the Antarctic issues.

The Department proposes to set up an Antarctic Study Centre with appropriate logistic base facilities in Goa. Steps are being taken to develop the land for this purpose. The first phase of the establishment of the Study Centre is expected to be completed during the Seventh Plan period.

LIVING RESOURCES

India with a long maritime history of the exploitation of living resources from the sea, occupies the eighth position in the world in regard to the total annual catch of fish. As per the need-based demand projections, the fish requirements of India's population by 2000 AD are estimated to be 114 lakh tonnes. At present 56 per cent of the total annual catch of about 30 lakh tonnes of fish is harvested from the seas. India with an extensive coastline of nearly 6,000 km and a vast exclusive economic zone of over 20 lakh sq km exploits about 46 per cent of the total catch of the living resources from the Indian Ocean. The potential annual fish catch from the sea is estimated to be about one crore

Systematic survey and exploration of marine living resources in exclusive economic zone of India and in the open ocean space using the oceanographic research vessels ORV Sagar Kanya and FORV Sagar Sampada is one of the major objectives of the Department. The area of operation of these vessels covers the Arabian Sea, the Bay of Bengal and the central Indian Ocean down to 20° S latitude.

The research vessel Sagar Kanya has completed 42 cruises. Multi-disciplinary studies have been carried out on board in various fields of oceanography in the exclusive economic zone. Thus, extensive studies have been conducted on the primary productivity and the occurrence of zooplankton and phytoplankton, meteorology, air-sea interaction and ocean circulation. The fisheries and oceanographic research vessel, Sagar Sampada has completed 47 cruises and it has carried out extensive studies on pelagic and demersal fishery resources in the west and east coasts and also in the waters around Andaman Islands. A cell for the management of the vessel Sagar Sampada has been established which will help in the implementation of the programme of management and monitoring the cruise programmes. A task force for drawing up a five-year plan for this purpose has been constituted.

CONTROL OF MARINE POLLUTION

Human activities on shore and at sea affect the marine environment. India uses about 34,000 tonnes of pesticides and about 11,000 tonnes of synthetic detergents annually. It is estimated that 25 per cent of this volume finds its way to the sea. The discharge of domestic sewage to Indian coastal waters is estimated at about five crore cubic metres annually. The present research and monitoring activities in the marine environment include measures to protect the coastal eco-systems against pollution effects. A network of stations has been established in the sea around the country to monitor the marine pollution. Collection of data on pollution parameters in these stations is being done by 15 agencies comprising National Institute of Oceanography and its regional centres, state pollution control boards, state institutions like CESS, Fisheries College, Mangalore and the Institute of Preventive Medicine, Hyderabad.

DEEP SEA MINING

The Preparatory Commission for the International Seabed Authority registered India in 1987 as the first 'Pioneer Investor' under the Land of the Sea System and allotted a mine site of 1.50,000 square kilometres for further exploration and development in the central Indian Ocean. This decision entitles India to explore and develop the resources of the deep seabed, which contain rich deposits of polymetallic nodules and which are a source of important minerals like copper, cobalt, nickel and manganese. However, commercial exploitation of these resources will take place only in future after the requisite technology has been developed/acquired and after the UN Convention on the Law of the Sea has come into force.

DESALINATION PROGRAMME

The desalination programme sponsored and funded by the Department of Ocean Development is being implemented by the Central Salt and Marine Chemical Research Institute and the Bharat Heavy Electricals Limited. As a result of considerable research and development efforts made by the Central Salt and Marine Chemicals Research Institute, desalination technology has been standardised, using the process of reverse osmosis. This technology was made available to the Bharat Heavy Electricals Limited for the design and construction of plants for desalination of brackish water. The plant fabricatd by BHEL offers simple and flexible method of purifying brackish water for drinking purposes. Besides, the system also removes harmful matter and bacteria from brackish water. The energy saving in reverse osmosis, as compared to conventional thermal desalination system, also makes this process economically viable. Reverse osmosis systems are designed and fabricated in modular blocks, enabling erection and commissioning of the plant.

HARNESSING OF WAVE ENERGY

The Department sponsored and assigned a major research project entitled "Scientific Investigation on the Extraction of Wave Energy" to the Indian Institute of Technology, Madras, during 1982. The first phase of the project was completed in the middle of 1987. Under this project, the Institute conducted extensive research for the selection of suitable techniques for harnessing wave energy. In continuation of this project, the Institute has proposed to conduct a sea trial experiment in which the techniques developed in the laboratory will be tested in field conditions by fabricating an experimental 150 kw wave power plant. The sea trials are being undertaken at Vizhinjam near Trivandrum.

NATIONAL INSTITUTE OF OCEANOGRAPHY

The National Institute of Oceanography was established in the year 1966 under the Council of Scientific and Industrial Research, New Delhi. The main objective of the Institute is to develop adequate knowledge related to physical, chemical, biological, geological and engineering aspects of the seas around India through: (i) study of physical processes in the ocean including monsoon; (ii) exploration of living resources of the sea; (iii) sea farming technology; (iv) bioactive substances from marine plants and animals; (v) development of offshore oilfields; (vi) deep sea exploration for minerals; (vii) utilisation of energy from the sea; (viii) coastal zone and harbour development, and (ix) studies for effective control of marine pollution.

With these aims, the Institute is engaged in the research and development projects for exploration and utilisation of the natural resources of the sea. Its major achievements are: (i) demarcation of a prime area 3,00,000 sq km in the central Indian Ocean for deep sea mining of polymetallic nodules and achieving the distinction of registering India as a 'Pioneer Investor' by United Nations and the first country to get the mining rights; (ii) exploring the offshore placer deposits in 13 bays along the Konkan coast. These deposits mainly contain ilmenite which is an important source of titanium and vanadium; (iii) extracts of several marine plants and animals have been prepared and many of them are showing promising pharmaceutical properties like anti-fertility, depressant, toxic, analgic, anti-viral spasmogenic, diuretic, etc.; (iv) studies on pollutants like hydrocarbons, pesticides and heavy metals in the Arabian Sea and Bay of Bengal and monitoring pollution in Indian waters; (v) studies on physical processes have helped in identifying various water masses, upwelling, thermal structure and monsoon; (vi) locating rich fishing grounds in the exclusive economic zone of India on the basis of biological and chemical studies; (vii) developing a technique for culturing green mussels on ropes from floating rafts, which has been demonstrated to fish farmers for commercial exploration, and (ix) designing, fabrication and installation of several instruments like databouys, current meter, tide guage, electronic bathythermograph, etc., for ocean research including unmanned weather station which was commissioned at Antarctica during the first scientific expedition.

The Institute has its own research vessel *RV Gaveshani* and manages Department of Ocean Development's research vessel ORV Sagar Kanya. Oceanographic data is maintained and managed by the Data Centre of the Institute to cater to the data and information needs of the user community in the marine field. An oceanographic *Atlas of EEZ*, showing different parameters at different depths and cruise inventories of RV Gaveshani and ORV Sagar Kanya were brought out for effective utilisation of oceanographic data that was collected. The Institute publishes a quarterly research journal *Mahasagar* and a newsletter.

BIOTECHNOLOGY

The recent developments in genetic engineering, cell fusion, cell culture, immunology, protein engineering, fermentation technology, etc., collectively called biotechnology have already demonstrated promising and beneficial application in various sectors including agriculture, animal husbandry, health, industry, energy and environment.

The Government set up the National Biotechnology Board in 1982 to promote activities in the new multi-disciplinary field. Subsequently, in February 1986, the Board was replaced by a full-fledged independent Department of Biotechnology (DBT) in the Ministry of Science and Technology. The main responsibilities entrusted to the DBT are to: (i) evolve integrated plans and programmes in biotechnology; (ii) identify specific R and D programmes in biotechnology and biotechnology-related manufacturing; (iii) establish infrastructural support at the national level; (iv) act as an agent of the Government for import of new recombinant DNA-based biotechnological processes, products and technology; (v) evolve bio-safety guidelines for laboratory research, production application; (vi) initiate scientific and technical efforts related to biotechnology; (vii) develop manpower in the areas of biotechnology, and (viii) establishment of International Centre for Genetic Engineering and Biotechnology.

In order to develop adequate trained manpower in the country, an integrated plan of manpower development including MSc/MTech/post-doctoral, short-term training courses and biotechnology associateships, has been launched. A new scheme "visiting scientists from abroad programme" has been initiated which envisages gaining and sharing of the current state of knowledge from technologically advanced countries. Apart from these, two programmes, namely, Technicians Training Programme has been started and Training course for R and D personnel is being formulated.

The Department has supported establishing a network of infrastructure facilities as needed for R and D, teaching and industrial activities. These facilities include germplasm collections; animal and microbial cell/tissue culture; animal house; oligonueleotide synthesis; production, import and distribution of enzymes, reagents and radio-labelled compounds; bio-process optimisation and pilot plant facilities, and information system. Under the Biotechnology Information System, the distributed information centres have commissioned the micro-vax system along with the ancillary facilities. Work for collecting comprehensive computerised inventory on patents relating to biotechnology, has also been initiated.

With a memorandum of understanding between the Department and the Council of Scientific and Industrial Research (CSIR), centralised facilities for import and distribution of enzymes has been set up in the CSIR Centre for Biochemicals, Delhi. The Centre has contacted various institutions to ascertain their requirements and has worked out a schedule for import of chemicals to meet the research needs.

The Department has been supporting R and D projects in various areas of biotechnology. While considering R and D projects for support, priority is given to proposals involving direct applications or requiring scale-up operations or field trials of products, etc., where possibilities of generating products, processes and services for commercial use are visible. The Department also supports projects involving relevant basic research with potentials of practical applicability. So far, nine projects have been funded by the Department. The ongoing projects include: tissue cultured propagation of bamboos, development of larval insecticide against mosquitoes (biocide-S), extraction of copper through bacterial leaching, development of facilities for research in liposome, etc. The Department is also promoting entrepreneurship and R and D in biotechnology at various laboratories and institutions and has reached a stage where technology is likely to be transferred in the near future for manufacturing of immunodiagnostic kits for early detection of pregnancy and several diseases like amoebiasis, hepatitis, AIDS, typhoid, etc.

Universal immunisation has been indentified as a major thrust area in the Seventh Plan and special emphasis has been laid on achieving immunisation of all eligible children and pregnant women in India in a fixed time-frame through a "mission-oriented approach". Therefore, a national Technology Mission on Immunisation was launched in February 1986. The objectives of the Mission are: (i) to promote, set up, undertake and monitor highly objective research and development activities in vaccinology with a view to developing new process technologies for new or improved vaccines and vaccine "cocktails"; (ii) to achieve self-sufficiency in essential vaccines by 1990; (iii) expansion of the vaccination coverage to achieve 85 per cent coverage of children (with DPT, BCG, polio, measles vaccines) and cent per cent coverage of pregnant women (with tetanus toxide), and (iv) to strengthen the storage and distribution system, including cold chain, disease surveillance, training of personnel, health education as well as operational research and monitoring mechanism. The mission is being jointly implemented by the Ministry of Health and Family Welfare (nodal agency) and the Department of Biotechnology. The Department of Biotechnology has been entrusted with the responsibilities of: (i) R and D for new and improved vaccines and (ii) self-suffiency in the indigenous production of vaccines. On the recommendation of expert groups, technologies have been selected for production of vaccines. Chick embryo fibroblast cell culture technology will be employed for production of hyper-attenuated measles vaccine. For oral polio vaccine, monkey kidney-cell-culture-based technology will be employed.

The Department has R and D collaboration programmes with the USSR, the USA, FRG, etc. The International Centre for Genetic Engineering and Biotechnology, New Delhi component has also been established which will focus its research efforts in the areas of agriculture (agrobiology-seed proteins, herbicide resistance, cytoplasmic male sterility, tissue specific expression of gene, and transcription of genes of agricultural importance and chloroplast DNA as transforming vector) human health (parasitology-antigenic variation in *Giardia lambia, Plasmodium falciparum* and hepatitis) and animal productivity.

The National Institute of Immunology under the Department has a research programme in areas relating to immunocontraception, development of vaccines against communicable diseases, immunodiagnostic kits and cattle improvement through embryo transfer technology. For sterilisation of male animals, a single injection technique developed by the Institute was successfully tried out for sterilisation of bulls. Another method for sterilisation of stray dogs developed by the Institute was also tried out on more than 3,000 dogs in collaboration with the Municipal Corporation of Delhi.

A Scientific Advisory Committee has also been constituted and is functioning to advise the Department on policy, issues and programmes. The SAC-DBT under the chairmanship of Secretary, DBT, consists of experts from concerned scientific agencies, research institutes, universities and industry. Another Standing Advisory Committee consisting of seven internationally known non-resident Indian scientists who are well established in different areas of biotechnology in countries like the USA and Canada, has also been separately constituted to render advice to the Department.

DEPARTMENTAL RESEARCH

A number of Government departments carry out research in certain fields or the other. Some of them are:

GEOLOGY

The Geological Survey of India, Calcutta is the principal agency entrusted with geological activities in the country. It is responsible for the preparation of the geological, geochemical and geophysical maps (ground and airborne) of the country, including offshore areas. These are for the exploration and evaluation of all mineral deposits (except oil, natural gas and atomic minerals), for carrying out studies relating to geotechnical problems, for rendering expert technical advice to different engineering projects and for conducting geoenvironmental studies connected with mining, desert control, etc. It is carrying out research, both fundamental and applied, in varied branches of earth sciences, *e.g.*, in the field of geochronology, stratigraphy, palaeontology, petrology, remote sensing, mineralogy, geochemistry, analytical chemistry and geophysics. It is also carrying out special investigations on geothermics, glaciology, seismology, etc. The results of the various activities, carried out by regions/wings, are collected, collated, processed and disseminated through information processing units, publications and map productions and data centres. Training programmes for developing the scientific manpower resources have been given a high priority and the training assistance is extended to other Indian organisations and member countries of the ESCAP.

BROADCASTING

The Research Department of All India Radio was set up in April 1937 with its primary aim to make radio wave propagation studies in medium and high frequency bands for scientific planning of broadcast services and to investigate problems relating to the maintenance and development of broadcasting in the country. The basic activities of the department are: (i) to undertake studies, investigations and R and D work for improvement of sound and TV broadcasting networks in the country, keeping in view the latest and futuristic advancements in the fields; (ii) to provide technical support to the operations of AIR and Doordarshan network; (iii) to undertake design and development of laboratory model of equipment needed by AIR/Doordarshan in large quantities and to draw out their specifications, in order to transfer technical knowhow for commercial production to monitor the development up to the first production by the commercial organisation and to conduct field tests and evaluation; (iv) to participate and offer expert advice on behalf of AIR and Doordarshan in national committees, ISI, Department of Electronics, etc., in formulating national standards; (v) to study, analyse and where necessary, carry out investigations in problems identified by CCIR, ABU, CBA, etc., so as to ensure that India's interests are safeguarded in international conferences, and (vi) to undertake on a reference from the engineering wings of AIR and Doordarshan, testing and evaluation of sound and TV equipment of all kinds which are proposed to be inducted into normal operations.

A Centre for Digital Techniques in Broadcasting in the Research and Development Department of All India Radio provided with equipment and allied system, undertakes design and developmental work in digital techniques applied to broadcasting in the country.

HYDRAULIC AND POWER RESEARCH

The Central Water and Power Research Station, Pune, established in 1916, is the premier hydraulic research institution in India and recognised as the regional laboratory of the United Nations Economic and Social Commission for Asia and Pacific in the area of waterways and water-borne transport.

The Central Soil and Materials Research Station, New Delhi, established in 1954, is conducting basic and applied research in geomechanics and construction materials, soil mechanics, foundation engineering, concrete technology and chemistry and sediment.

The National Institute of Hydrology, Roorkee, set up in 1978 as an autonomous society, is a premier national research organisation carrying out systematic scientific activities in basic, theoretical and applied hydrology.

The Central Board of Irrigation and Power, New Delhi works for the promotion and coordination of research work in the field of irrigation and power engineering.

RAILWAYS

The Research, Designs and Standards Organisation of the Ministry of Railways was created in 1957 by merging the Central Standards Office and the Railways Testing and Research Centre, Lucknow. It has now grown up into a fully equipped research organisation, having experts from all the disciplines of the railways.

FIBRE TECHNOLOGY

The cooperative research associations in the textile sector constitute an important segment of activities relating to research and development of fibre technology. These are Ahmadabad Textile Industries Research Association, Ahmadabad (established in 1949), the Bombay Textile Research Association, Bombay (established in 1954), the South India Textile Research Association, Coimbatore (established in 1951), the Silk and Silk Mill Research Association, Bombay (established in 1950), the Indian Jute Industries Research Association, Calcutta (registered in 1966), the Wool Research Association, Bombay (established in 1963), the North Indian Textile Research Association, Ghaziabad (established in 1974), and the Man-made Textile research Association, Surat (recognised as an independent body in 1980-81).

TELECOMMUNICATIONS

The Telecommunication Research Centre is the research and development organisation of the Department of Telecommunications. Set up in 1956, it has progressively grown into a large organisation dedicated to the work of telecommunications development. Amongst other activities, it is assessing the future needs of telecommunication network in the introduction of appropriate new technology and also undertakes development of designs for indigenous fabrication of new systems.

8 Environment

THE problems encountered in the field of environment in India arise due to conditions of poverty and under-development. Developmental activities lost sight of environmental and ecological imperatives. The damage done to the environment because of the large size of the population and its increase and scale of developmental activities, is of such magnitude that urgent remedial measures are called for. Environmental management is now accepted as a major guiding factor for national development in India. There has been, over the last decade, a progressive strengthening of official involvement in environmental management, with increased scientific, technical, administrative and legislative back-up at the Central and state levels.

With the realisation that poverty and the state of under-development led to many of the environmental problems that confront the nation, came the understanding that it was more rapid development which was the best approach. This development has to benefit people (and particularly the poor) by providing for their basic human needs and rising aspirations. Thus, many of the developmental programmes, and particularly those included in the 20-Point Programme, could indeed be termed as environmental management programmes.

However, another class of environmental problems has arisen as unintended side-effects of the very attempts at development. These are: the mismanagement of natural resources, large scale deforestation, unplanned discharge of residues and wastes, handling of toxic chemicals, indiscriminate construction, expansion of settlement activities, etc. It is to this class of problems that the tools and methodologies of environmental planning are primarily addressed. In the beginning of the Fourth Plan, problems related to environment received the Government's attention. Also a committee on environmental coordination was set up in 1972 to look into the problems and suggest solution in consultation with the experts and the concerned ministries/departments of the Government. Another committee was set up in January 1980 for reviewing the existing legislative measures, administrative machinery for ensuring environmental promotion and for recommending ways to strengthen them. On the recommendation of this high-powered committee, the Department of Environment was set up in 1980, which subsequently was made a new Ministry of Environment, Forests and Wild Life in 1985 to serve as the focal point in the administrative structure for planning, promotion and coordination of environmental programmes.

PROTECTION OF ENVIRONMENT

There are about 30 major enactments related to protection of environment now being administered by the Central and state governments. The Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and

Control of Pollution) Act, 1981, the Factories Act and thc Insecticides Act are some of the prominent ones among these enactments. These Acts are implemented through several organisations like the Central and state pollution control boards, chief inspectors of factories and insecticides inspectors of agriculture department. In spite of several organisations functioning in the field, industrial accidents have led to widespread concern regarding the danger to environment from hazardous substances. The existing laws to cover such hazards do not provide a clear focus of authority to prevent or limit the damages. Taking into account these factors, the Government has enacted the Environment (Protection) Act, 1986 to provide a single focus for environmental issues in the country and to plug loopholes in the existing Acts. This Act has been brought into force from 19 November 1986. Its important features are: (a) it confers powers on the Central Government to: (i) take all necessary measures for protecting the quality of environment; (ii) coordinate the actions of states, officers and other authorities under this Act or under any other law, which are related to the objects of this Act; (iii) plan and execute a nationwide programme for the prevention, control and abatement of environmental pollution; (iv) lay down standards for discharge of environmental pollutants; (v) empower any person to enter, inspect, take samples and test; (vi) establish or recognise environmental laboratories; (vii) appoint or recognise government analysts; (viii) lay down standards for the quality of environment; (ix) restrict areas in which any industries, operations or processes may not be carried out or shall be carried out subject to certain safeguards; (x) lay down safeguards for prevention of accidents and take remedial measures in case of such accidents; (xi) lay down procedures and safeguards for handling hazardous substances; (xii) constitute an authority or authorities for exercising its powers; (xiii) issue directions to any person, officer or authority including the power to direct closure, prohibition or regulation of any industry, operation or process or stoppage or regulation of supply of electricity, water or any other service; (xiv) require any person, officer, state government or authority to furnish any prescribed information, and (xv) delegate powers to any officer of a state or authority; (b) it confers powers on persons to complain to the courts regarding any violation of the provisions of the Act, after a notice of 60 days to the prescribed authorities; (c) the Act makes it obligatory for the person incharge of a place to inform the prescribed authorities regarding any discharge or apprehended discharge of any pollutants in excess of standards by accident. The authorities, on receipt of such information or otherwise, shall take remedial measures to prevent or mitigate the pollution caused by such accidents and the expenses incurred by the authorities in respect of remedial measures are recoverable with interest from the polluter; (d) it prescribes stringent penalities for violation of the provision of the Act. No distinction is shown between government departments and other companies, and (e) the jurisdiction of civil courts is barred under the Act.

The Ministry has taken several steps to provide legal and institutional basis for implementation of the Act, which include issue of rules, notification of

standards, action regarding environmental laboratories, strengthening of state departments of environment and pollution control boards, delegation of powers, identification of agencies for carrying out various activities for hazardous chemical management and setting up of environment protection councils in the states. The Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 have been amended to make them more stringent.

PREVENTION AND CONTROL OF WATER POLLUTION

The Central Board for the Prevention and Control of Water Pollution is the national apex body for the assessment, monitoring and control of water and air pollution. The executive responsibilities for enforcement of the Acts for prevention and control of pollution of water (1974) and air (1981) as also of the Water Cess Act (1977) are carried out through the Central Board and similar statutory boards established in the states under these Acts. All states, except Manipur, Nagaland, Sikkim, Arunachal Pradesh and Mizoram have constituted their boards. The Central Board looks after pollution control activities in the union territories.

Consequent on the enactment of the Environment (Protection) Act, 1986, major additional responsibilities have been placed on the Central and state boards. Under the Act, effluent and emission standards in respect of 24 specific industries have been notified. General standards for discharge of effluents also have been notified which are applicable to all types of effluents generated from the industries including municipal sewage except the industries for which standards have already been notified. So far 67 laboratories located in various parts of the country have been recognised as environmental laboratories. Minimal National Standards (MINAS) for pollution discharge from specific industries have been formulated and control measures are being implemented in a phased manner. In case of the river basin studies, in addition to the completion of studies on six basins *viz.*, Ganga-Yamuna, Damodar, Krishna, Brahmani-Baitarani, Subarnarekha and Sabarmati, studies on nine other rivers Cauveri, Godavari, Mahanadi, Mahi, Brahmaputra, Narmada, Tapti, Pennar and Indus are expected to be completed by 1990.

The Central Board, in collaboration with the Department of Ocean Development, has indentified 173 monitoring stations all along the Indian coast for the purpose of water quality measurement. The programme also involves the state pollution control boards. The first round of sampling was done in October 1987. The state boards have completed four rounds of coastal monitoring.

Besides, a project on waste water recycling is in operation. The project is aimed at finding out optimum quality, quantity and periodicity of application of waste water on land which will not cause groundwater pollution, soil drainage problem and health hazard. Based on such an investigation, guidelines have been evolved for application of waste water on land so as to use land as treatment medium for partially treated waste water. The scheme was initiated at three sites, one each at Nagpur, Gwalior and Vadodara.

CENTRAL GANGA AUTHORITY

The Central Ganga Authority was set up by the Government in 1985 to oversee the implementation of the action plan drawn up for cleaning the polluted stretches of the Ganga. A steering committee has already identified the different schemes to be taken up under the plan for Uttar Pradesh, Bihar and West Bengal through which the river runs. A committee has been set up to monitor the progress of the schemes and its impact on the river quality.

The action plan proposes to divert the sewage now flowing into the river to other locations for treatment and convert it into a valuable energy source. The schemes identified towards this objective include renovation of existing trunk rivers and outfalls to prevent the overflow of sewage into the Ganga; construction of interceptions to divert the flow of sewage and other liquid wastes into the river, and renovation and construction of pumping stations and sewage treatment plants to recover maximum possible resources. Smaller schemes like construction of community toilets, conversion of dry toilets to flush toilets, construction of electric crematoria, development of river ghats and modernising the solid waste management system, were also taken up to reduce the domestic waste load on the Ganga. The pollution load on the river will be reduced by 75 per cent on completion of the schemes.

The Central Ganga Authority has taken up the problems resulting from industrial pollution load on the river. Sixty eight gross industrial polluters have been identified and a time-bound programme for setting up effluent treatment plants has been initiated. The existing systems of water abstraction and utilisation are under review and measures for augmenting the flows at critical points are being identified by the concerned agencies. The action plan has also provided a forum for protecting the fragile environment of the Gangotri-Gomukh region, the source of the river.

A total of 262 schemes at a cost of Rs 260 crore, have been sanctioned for execution. Of these, 45 schemes have already been completed. The rest are likely to be completed by the end of the Seventh Plan and only the long gestation schemes will spill over into the next Plan.

The quality of the river water is being monitored in collaboration with the Central Board for Prevention and Control of Water Pollution and the state pollution control boards. Leading national laboratories, institutes and universities have been associated with different aspects of water quality, monitoring and study of physio-chemical characteristics of the river. A macro-level model for river quality has been developed and verified for the stretch of the river between Rishikesh and Patna, which will be used for simulating water quality data. At the micro-level, sampling, collection and analysis of water quality is being carried out at 27 identified locations.

ENVIRONMENTAL IMPACT ASSESSMENT

The two major criteria—the project should maximise economic returns and it should be technically feasible—are no longer considered adequate to decide the desirability or even the viability of the project. It is now widely recognised that the development effort may produce not only sought-for benefits, but other—often unanticipated—undesirable consequences as well which may nullify the socio-economic benefits for which the project is designed. It is, therefore, considered imperative that the environmental issues are anticipated and incorporated in the development project at the project formulation stage itself for appropriate decisions on the aspects of: (i) siting of the project; (ii) choice of technology, and (iii) choice of preventive and control measures to minimise environmental damage.

IMPACT ASSESSMENT PROCEDURE

The impact assessment of the development projects is carried out by the Department with the help of inter-ministerial appraisal committees comprising experts from related disciplines. The feasibility reports along with environmental management plan and/or environmental impact statement furnished by the project authorities are scrutinised by these expert groups and additional information, as and when required, is collected through field visits of specially constituted expert groups. To help the project authorities, the Department has developed guidelines and questionnaires indicating clearly the environmental issues to be incorporated in different projects.

Projects approved by the Department often require implementation of suggested safeguards and mitigative measures for which an effective monitoring mechanism is required. The Department and its associated agencies like the Botanical Survey of India and the Zoological Survey of India with their network of regional stations provide all necessary help to the project authorities during the project formulation, implementation and monitoring stages.

RIVER VALLEY PROJECTS

The major environmental impacts of river valley projects which need consideration are: (i) degradation of catchment areas; (ii) command area development; (iii) rehabilitation of those affected; (iv) increased incidence of water-borne diseases; (v) reservoir induced seismicity, and (vi) deforestation and loss of flora and fauna including genepool reserves. Only 1,100 sq km of catchment area has been treated up to the Fifth Plan against the estimated 15 lakh sq km are covering 59 major projects. Similarly, the command area development has more or less been the responsibility of the farmer who neither has the technical knowhow nor the financial capability to undertake the necessary land levelling, grading and drainage operations to fully utilise the irrigation potential.

Introduction of perennial irrigation also results in increased incidence of

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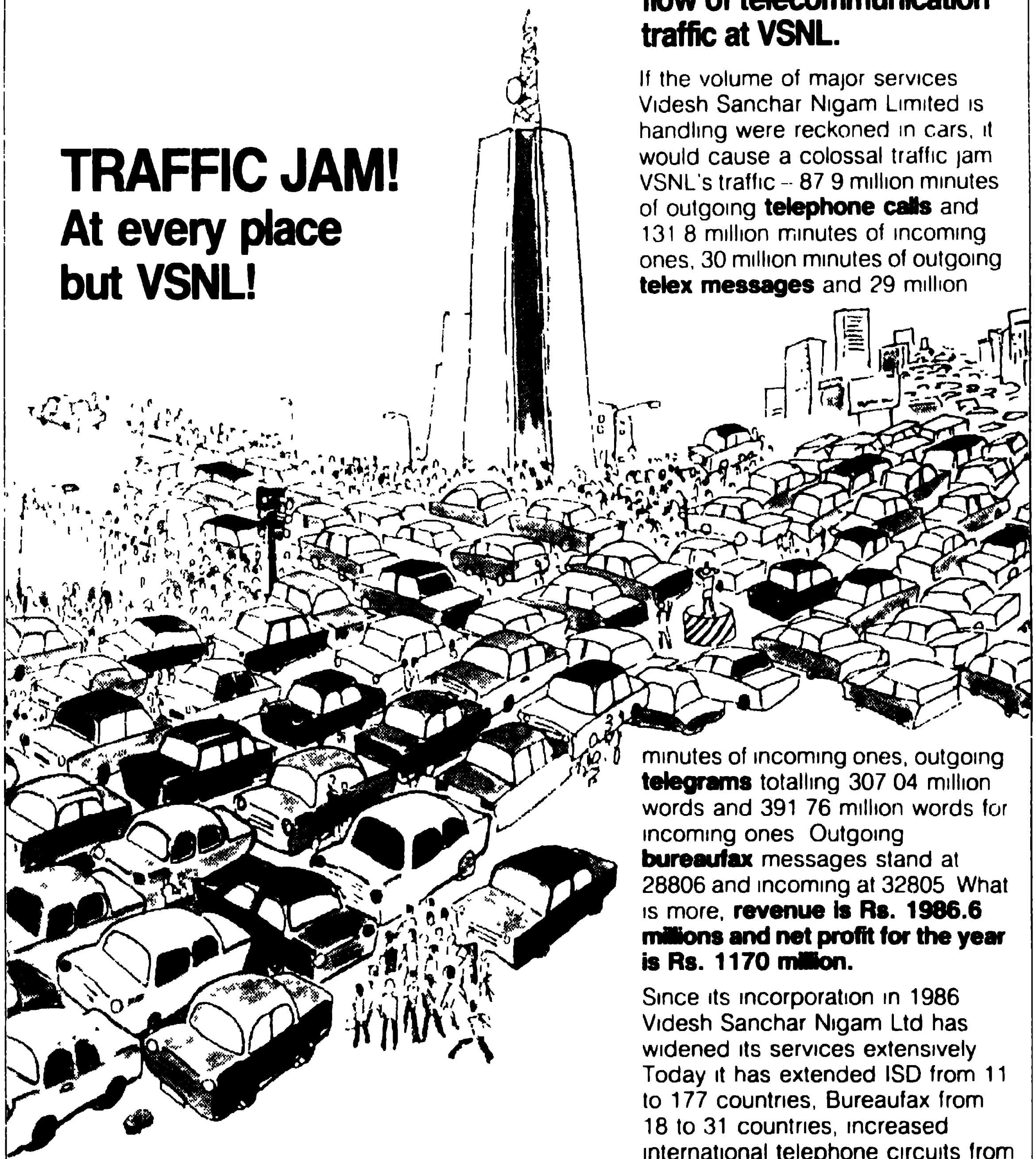

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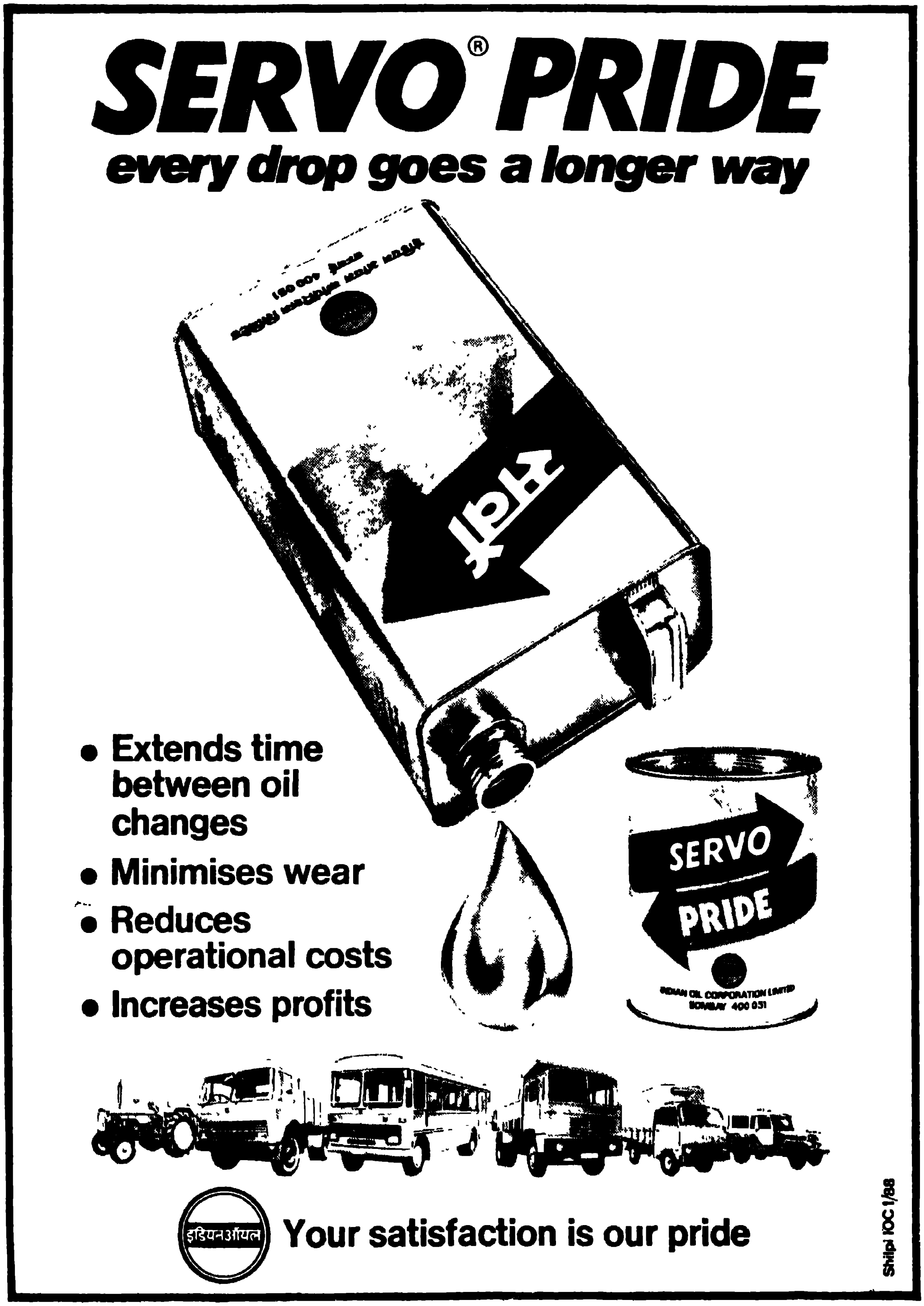

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water-borne diseases like malaria, filaria, schistosomiasis, etc. The need for preventive measures and the health delivery system becomes all the more important in rural areas where perennial irrigation is introduced.

Most of the river valley projects result in submergence of large tracts of forests, thereby destroying flora and fauna as well as rich biological wealth. The genepool reserves in some of the evergreen forests of the country also are threatened because of destruction which usually accompanies the submeregence due to the projects. The genepool reserves are critical for the survival of the human race as they provide not only the necessary immunity against pests and diseases affecting the high-yielding cereals, vegetables and food crops but also to develop new varieties.

MINING PROJECTS

The major environmental impacts of mining operations are: (i) degradation of land; (ii) pollution of surface and groundwater resources; (iii) pollution of air; (iv) deforestation including loss of flora and fauna; (v) rehabilitation of affected population including tribals, and (vi) impact on historical monuments and religious places.

A major component of the mining operations in India is opencast which severely affects the land use pattern in the area. The mining operations and the surface subsidence due to underground mining operations have serious adverse impact on the growth of vegetation as well as the general landscape of the area. The minerals extracted interact with the surface and groundwater and the mine water, if acidic and/or toxic in nature, pollutes the water resources. The loss of top soil due to deforestation also depletes the groundwater resources and results in the drying up of the perennial sources like springs and streams especially in hill areas.

THERMAL POWER PROJECTS

The major environmental impacts of thermal power projects include: (a) air pollution; (b) water pollution; (c) deforestation; (d) rehabilitation, and (e) land degradation. The fuel gases emerging from stacks contain sulphur dioxide, oxides of nitrogen, carbon monoxide, etc., and are detrimental both to human beings as well as vegetation. Water pollution from thermal stations can be due to the release of slurry which is essentially a mixture of fly ash and water, The thermal pollution is due to the release of cooling water which can affect the aquatic life. The solution to the disposal of ash problem is in its recycling by converting it into building blocks and through its use in other construction works. Another step which helps in abating pollution due to disposal of ash is the stabilisation of ash dumps through suitable vegetation.

INDUSTRIAL PROJECTS

The major environmental impacts of the industrial projects include: (a) air pollution; (b) water pollution, and (c) disposal and utilisation of solid waste. The impact assessment of development projects ensures that the natural resources are optimally utilised to achieve sustained development.

ECO-REGENERATION AND DEVELOPMENT

The National Eco-Development Board was established in 1981 with the major objectives of demonstrating the feasibility of economic development without ecological imbalance, planning and implementing programmes for arresting further damage to degraded eco-systems, undertaking programmes for their speedy restoration and sensitising the youth on the importance of conservation through the technique of learning by doing.

Eco-development task forces have been deployed for eco-restoration through afforestation and soil conservation schemes. Eco-camps are organised with participation and involvement of public and voluntary agencies. The major field demonstration projects for eco-regeneration of degraded areas include, among others, those undertaken in areas at the catchments of the Garur Ganga, Patal Ganga and Mainagad, Shivalik foothills (Hoshiarpur), Auroville (Pondicherry), Haldighati (Udaipur), Pushkar Valley (Ajmer) and Cherrapunji (Meghalaya).

The Govind Ballabh Pant Institute of Himalayan Environment and Development is being developed as a decentralised network of seven centres of advanced studies to undertake action-oriented integrated R & D studies in the region.

BIOSPHERE RESERVES

A network of biosphere reserves is proposed to be established in the country for long-term protection and conservation of biological diversity. So far, three such biosphere reserves have been established, *viz.*, Nilgiri Biosphere Reserve in Kerala (1986), Nanda Devi in UP (1988) and Nokrek in Meghalaya (1988). The Ministry acts as the nodal agency for this programme and provides partial financial support, trained personnel and knowhow for the management of biosphere reserves as well as for preparing the requisite guidelines.

WETLANDS

Considering the importance of wetlands, measures have been initiated for their conservation and management to educate the public on the need for their conservation as well as their economic utility and to commence scientific and application-oriented research study on their productivity. The Government has so far identified 10 wetlands for preparation of management action plan. The nodal academic research institution for each of the wetlands have also been identified. These 10 wetlands are: Kolleru in Andhra Pradesh, Wullar in Jammu and Kashmir, Chilka in Orissa, Loktak in Manipur, Bhoj in Madhya Pradesh, Sambhar and Pichola in Rajasthan, Ashtamudi in Kerala, Harike in Punjab, Ujni in Maharashtra.

MANGROVES

The mangrovesa are the salt-tolerant forest eco-systems found mainly in tropical and sub-tropical intertidal regions. Considering their importance, steps have been initiated to conserve them, to educate the public on the need for their conservation as well as their economic utility and commence scientific and application-oriented research on their productivity, flora, fauna, etc. Fifteen areas for preparation of management action plan have been selected. These are: northern Andaman and Nicobar, Sunderbans in West Bengal, Bhitarkanika in Orissa, Coringa in Andhra Pradesh, Mahanadi delta in Orissa, Pichavaram in Tamil Nadu, Goa, Godavari delta in Andhra Pradesh, Gulf of Kutchchh in Gujarat, Coondapur in Karnataka, Achra Ratnagiri in Maharashtra, Vembanad in Kerala, Point Calimere in Tamil Nadu and Krishna estuary in Andhra Pradesh.

NATURAL RESOURCE MANAGEMENT

In order to have an accurate and updated inventory of bio-resources such as land, water, forests, mineral resources, ocean, etc., a National Natural Resource Management System has been established. The Standing Committee on Bio-resources and Environment, one of the committees established under the system, has formulated a detailed document on the key issues and identified 37 projects for management of resources by integrating conventional services and remote sensing techniques. Of these, seven projects have been sanctioned during 1987 and three projects during 1988-89 in the areas of mining, industrialisation, coastal environment and eco-development.

WASTELAND DEVELOPMENT BOARD

A National Wasteland Development Board was set up in 1985, primarily to catalyse programmes for wasteland development and increase the pace of afforestation in the country. A new approach to the enlarged programme was to enhance people's participation. To this end, various schemes for rural fuelwood plantations, soil and moisture conservation in the Himalayan tract, raising of decentralised people's nurseries (with involvement of school children, women, youth and rural groups), tree growers' cooperatives, silvi-pastoral development and assistance to voluntary agencies for afforestation/wasteland development projects, have been operated. The overall afforestation coverage in the first three years of the Seventh Plan has been about 50.4 lakh hectares.

A National Wasteland Identification Project was carried out in 146 districts resulting in preparation of wasteland maps showing the extent, location and type of wastelands in different villages of these districts. The project involved the use of lands at satellite/remote sensing imagery and other data from different sources.

The Indira Priadarshani Vrikshamitra Awards were instituted in 1986 to recognise significant efforts by individuals, institutions and government agencies in afforestation and wasteland development. So far, these awards have been given to 55 persons/organisations.

FORESTS

Forests are a renewable resource and have contributed substantially to the economic development of the country by providing goods and service. Forests also have a major role in enhancing the quality of environment. The country has an area of 747.2 lakh hectares notified as forests. Of these, 397.8 lakh hectares are classified as reserved and 216.5 lakh hectares as protected. Unclassified forest area is spread over 86.7 lakh hectares and 46.2 lakh hectares classified as others. The optimum forest cover proportionate to the geographical area is 60 per cent in the hills and 20 per cent in the plains.

FOREST POLICY AND LAW

India is one of the few countries which has a forest policy since 1894. The resolution of the forest policy states: (i) the sole object to which the management of forests is to be dedicated is to promote the general well being of the country; (ii) the maintenance of adequate forests is dictated primarily for the preservation of the climatic and physical conditions of the country, and to fulfil the needs of the people; (iii) permanent cultivation should come before forestry; (iv) satisfaction of needs of the local population at non-competitive rates, if not free, should override all considerations of revenues, and (v) after fulfilment of the above conditions, the realisation of maximum revenue should be the guiding factor.

The forest policy was revised in 1952. It laid down the basic principles for proper management of the forests of the country to derive from them maximum benefits, direct or indirect. These are: (i) classification of forests on a functional basis *viz.*, protection of forests and village forests; (ii) establishment of tree lands wherever possible for the amelioration of the physical and climatic conditions and for promoting the general well being of the people; (iii) ensuring increased supplies of fodder, timber for agricultural implements and firewood and to release cattle dung for use as manure; (iv) opposition to indiscriminate extension of agriculture by the excision of forests, as this not only deprives the local population of wood, grass, etc., but also deprives the land of its natural defences against duststorms, hot winds and erosion, and (v) stipulation that India as a whole should aim at maintaining one-third of its total area under forests, the proportion in the hills and plains being 60 per cent and 20 per cent, respectively.

Since the enforcement of the forest policy in 1952, developments of far-reaching importance have taken place in the economic, political and social fields. There is a much greater realisation today that the tribals and fringe population have to be taken into confidence by making them participate in developmental plants and management decisions to build up a group of determined people committed to the cause of forest conservation.

The revised forest policy, 1988, on the basis of the experience gained in the intervening years has its basic objectives: (i) maintenance of environmental stability through preservation and where necessary restoration of the ecological balance; (ii) conserving the natural heritage of the country; (iii) checking soil erosion and denudation in the catchment area of rivers, lakes, reservoirs; (v) checking the extension of sand-dunes in the desert areas of Rajasthan and along the coastal tracts; (v) increasing substantially the forest/tree cover in the country through massive afforestation and social forestry programmes; (vi) meeting the requirements of fuelwood, fodder, minor forest produce and soil timber of the rural and tribal populations; (vii) increasing the productivity of forests to meet national needs; (viii) encouraging efficient utilisation of forest produce and maximising substitution of wood, and (ix) creating a massive people's movement with the involvement of women for achieving the objectives and to minimise pressure of existing forests.

Recognising the urgent need to halt the dangerous trend where the forests have reached a stage of regression very near the irreversible threshold, the Department is giving a new orientation to the entire gamut of forest-related activities. Some of the important areas for immediate action for effective protection of forests include afforestation and development of wastelands, reforestation and replantation in existing forests, strengthening of forest survey, forest settlement, systematic and thorough inspection by forest officials, restriction of grazing, supply of other kinds of fuel, control on merchants of timber, ban on monoculture, etc.

FOREST CONSERVATION

Increasing destruction and degradation of forests and treelands in the country, especially in the Himalayas and other hill areas, is leading to heavy erosion of top soil, erratic rainfall and recurring floods, besides causing acute shortage of firewood and, what is more important, the loss of productivity due to the eroded and degraded lands. It is in this perspective that the Forests (Conservation) Act, 1980 was enacted, primarily to check indiscriminate deforestation/diversion of forest lands for non-forestry pruposes. The Act provides that no forest land will be dereserved or diverted for non-forest use without approval of the Central Government. The Act was amended in 1988.

Prior to promulgation of the Act, the rate of diversion was 1.5 lakh hectares per annum during 1951-80. This rate of diversion has come down to 5,500 hectares per annum during the year after the enactment.

Degradation of forests due to biotic pressure has been another area of concern. Therefore, guidelines have been framed for preparation of working plans and felling in forests. Some of the salient features are: (i) working plans should be up-to-date and stress conservation; (ii) preliminary working plan should have a multi-disciplinary approach; (iii) tribal rights and concessions should be highlighted along with control mechanisms; (iv) grazing situation should be studied in detail and specific prescriptions should cover fodder propagation; (v) shifting cultivation and encroachments need to be controlled; (vi) clear-felling with artificial regeneration should be avoided as far as possible and clear-felling blocks should not exceed 10 hectares in hills and 25 hectares in plains, and (vii) banning all felling above 1,000-metre altitude for a few years should be considered to allow these areas to recover. Critical areas in hills and catchment areas, prone to landslips, erosion, etc., should be totally protected and quickly afforested.

Some of the other steps taken for preservation of forests have been: intensification of action under the Indian Forest Act; states are taking steps to eliminate the agency of contractors working in forests; smokeless *chulha*, non-conventional energy sources, such as, biogas, solar cookers, water-heaters, etc., are being popularised; grazing, encroachment, shifting cultivation and the possibility of substitution of wood by other products are being studied to find long-term solutions. Townships containing a population more than 5,000 in the vicinity of forests have been identified and states and the Ministry of Petroleum and Natural Gas have been requested to supply liquified petroleum gas to those areas on a priority basis to bring down the pressure on fuelwood forests.

FIREWOOD

The situation in respect of firewood is also precarious, for the fuelwood occupies a predominant place as an energy source in rural areas. As against the estimated requirement of about 13.3 crore tonnes of fuelwood per annum, the supply is around 4.9 crore tonnes, out of which the recorded production is only 1.5 crore tonnes. Because of scarcity of firewood, considerable quantities of cowdung (estimated around 7.3 crore tonnes) and agricultural residues are burnt as fuel.

FOREST FIRE CONTROL

A project aimed at the prevention, detection and suppression of forest fire has been launched with the assistance of UNDP. It covers forest areas of Uttar Pradesh and Maharashtra. Ground fire suppression system including hand-tools, mechanised equipment and water-handling equipment, helicopters, etc., are utilised to suppress forest fires in the project areas.

WILDLIFE

A National Wildlife Action Plan adopted in 1983 provides the framework of strategy as well as programme for wildlife conservation in the future. The protected area is proposed to be increased to cover four per cent of the geographical area as against three per cent at present. The Central Directorate of Wildlife Preservation and the Wildlife Institute of India, Dehra Dun, are the nodal agencies for initiating and monitoring programmes and projects set out in the Action Plan, with the help of states and union territories which are directly responsible for the actual protection and management of wildlife in the country. The main areas on which the Central Directorate of Wildlife Preservation has been focussing its attention are: strengthening the management and protection infrastructure of national parks and sanctuaries, with financial assistance made available through a number of Centrally-sponsored schemes; special projects for conserving rhinos in Assam and for control of poaching of elephants for ivory in the southern states and captive breeding programmes for endangered species. Stringent control on trade and dealing in wildlife and its product including their import and export as also by implementation of international treaties and conventions like the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), are also receiving due importance. A comprehensive amendment of the Wildlife (Protection) Act, 1972, to provide more deterrent punishment for wildlife-related offences, is underway.

PROJECT TIGER

The Centrally-sponsored Project Tiger completed its 15th year in 1988 with the addition of a new tiger reserve in Kalakad-Mundenthurai in Tamil Nadu. Now, there are 17 tiger reserves in India extending over 25,000 sq km of forest area. Emphasis is being laid upon strengthening research and veterinary components of the reserves.

PROJECT RHINO AND DUCK

A special project for the conservation of the rhinos in Assam is being implemented while captive breeding and rehabilitation projects for the white-winged wood-duck have been taken up in Assam and Arunachal Pradesh.

RESEARCH PROMOTION

ENVIRONMENTAL RESEARCH PROGRAMME

The main functions of this programme are to develop strategies for sustainable resource management and create facilities and trained manpower to conduct environmental research in the country. Major programmes include: (a) integrated action-oriented eco-development research programmes in Western Ghats, Eastern Ghats, Himalayan region and the Ganga, and (b) all-India coordinated research projects on ethnobiology, air pollution and plants, conservation of endangered plant species (seed biology and tissue culture), wetlands and mangroves.

Besides a number of smaller location-specific research projects have been initiated. Two research committees, Indian National Man and Biosphere Committee and Environment Research Committee, make recommendations on priority areas for environmental research, scrutinise research proposals received from various research institutions, evaluate the progress and recommend suitable means for implementation of research projects.

On the basis of a review of the research programmes undertaken in the past and an assessment of future requirements, a profile identifying the priority areas of research, has been drawn up under five fundamental elements, *viz.*, land, water, air, space and energy with two basic approaches for study *viz.*, the eco-systems management and the ecological aspects. The eco-systems include the mountains, forests and lands, mangroves, islands and coastal areas, arid and semi-arid zones, rivers and river basins. Similarly, the management and technological aspects include monitoring and control, development process systems and instruments, health and toxicology, impact assessment and management.

Creation of 'Centres of Excellence' was initiated to strengthen the country's environmental research and training base. Three such centres have been set up so far. The first centre is at Indian Institute of Science, Bangalore, which focuses on Western Ghats and air and water pollution. The second centre at Ahmadabad focuses on environmental education and is engaged in development of educational material. The third centre is at Indian School of Mines, Dhanbad, the main area of its activity is the study of mining environment.

FORESTRY RESEARCH

Forestry research is mainly the responsibility of the Forest Research Institute and College, Dehra Dun and its regional stations. The Indian Council of Forestry Research and Education has been set up to look after the forestry research. New sets of research priorities grouped appropriately under basic research, technology and application have been identified. It has also been decided to revamp research set-up by upgrading the existing regional research centres into full-fledged forestry research institutes to cater to the needs of different eco-geographic regions of the country.

At present, in addition to the existing research institute at Dehra Dun, five new research institutes have been set up namely: (i) Institute of Arid Zone Forestry Research, Jodhpur; (ii)Institute of Northern Penninsular Deciduous Forests, Jabalpur; (iii) Institute of North-Eastern Moist and Wet Evergreen Forests, Jorhat; (iv) Institute of Wood Science and Technology, Bangalore, and (v) Institute of Tree Breeding and Genetics, Coimbatore. These institutes will conduct national level research on a particular facet of forestry while taking care of regional research needs.

WILDLIFE RESEARCH

Wildlife research programme is carried out by the Wildlife Institute of India. Research projects involving habitat evolution, elephant movement, ecology of *gharials* and turtles, status of endangered species, animal behaviour, animal health and other ecological status are underway in different parts of the country. New projects concerning the ecology and status of endangered species like lion and snow-leopard have also been initiated.

EDUCATION, AWARENESS AND INFORMATION

Promotion of environmental education, training and awareness at various levels is an essential pre-requisite for environmental management. To this end, several activities have been initiated to inculcate a consciousness among almost all categories and age groups of the population. Special emphasis has been accorded to non-formal education through seminars/workshops, training programmes, eco-camps, multi-media campaigns, etc. A major national environmental awareness campaign has been launched since July 1986 to create environmental awareness at all levels.

In order to encourage and recognise excellence in every branch of research related to environmental science, the Department had instituted the *Pitambar Pant National Environment Fellowship Award* in 1978. It has also constituted another national award entitled *Indira Gandhi Paryavaran Puraskar*, to be awarded annually to any citizen of India or organisation for significant contribution in the field of environment. The award is of the value of Rs one lakh and has been started from 1987. The Bombay Natural History Society has been given this award for 1987.

The National Museum of Natural History, set up in New Delhi in 1972, is concerned with the study and interpretation of natural world in its various manifestations and is charged with the responsibility of promoting non-formal education in ecology, wildlife and environment. It is designed to provide knowledge about nature, interpreting natural phenomena and projecting the responsibility of man towards environment. It has been decided to set up a Natural History Museum in Mysore during the Seventh Plan.

For the first time, education in forestry also has been made available in 14 agricultural universities with degree courses. The in-service training of officers of the Indian Forest Service is given at the Indira Gandhi National Forest Academy, Dehra Dun, which has been delinked from the Forest Research Institute. The training of forest rangers, which was partly the responsibility of the Central Government, is being handed over to the states. In order to enable people's participation in forestry, an elaborate scheme of forestry extension is being worked out for the first time.

Environmental Information System (ENVIS), set up in 1982, is catering to the information needs of policy-makers, decision-makers, research workers and the general public. A national network of 10 ENVIS centres in specific subject areas like pollution control, toxic chemicals, coastal and offshore ecology, occupational health, energy and environment, upgradation of wastes, etc., in selected institutions, established earlier, are functioning. More centres are likely to be set up to cover the multi-disciplinary aspects of environment. ENVIS also publishes a quarterly journal entitled *Paryavaran Abstracts* which reports, among other things, the Indian research inputs on environment.

INTERNATIONAL COOPERATION

The Ministry functions as the nodal agency in the country for the United Nations Environment Programme (UNEP); the South Asia Cooperative Environment

Programme (SACEP); the International Union for Conservation of Nature and Natural Resources (IUCN), and International Centre for Integrated Mountains Development (ICMOD). It is also the nodal point for interaction with numerous other international agencies, regional bodies and multilateral institutions. The Ministry coordinates all bilateral cooperation in the field of environment and forestry. India has a number of bilateral cooperation programmes with the Netherlands, Norway, Sweden, Denmark, Britain, the USA, the USSR, Canada, Japan and FRG. It also implements social forestry programmes with the World Bank assistance.

India plays an important role in dealing with regional environmental problems through SACEP. Recently, a move was initiated for studies of environmental degradation and natural disasters through the South Asian Association for Regional Cooperation. The Ministry is playing a nodal coordinating role in deliberations on global environmental problems such as depletion of the ozone layer, greenhouse effect and global warming, trans-boundary movement of hazardous chemicals and chemical wastes, protection of whales and migratory bird species, etc.

India is a signatory to the World Heritage Convention and the Ministry deals with the natural sites inscribed in this convention. The Keoladeo National Park and the Sunderbans National Park have been inscribed on the World Heritage list. The Nanda Devi National Park is likely to be inscribed in the list soon. India is a member of the Convention on International Trade in Endangered Species, the International Whaling Commission, Antarctica Treaty, the Convention on Migratory Species and a number of other international agreements for the protection of flora and fauna.

9 Health

HEALTH and human development form integral components of overall socio-economic development of any nation. Under the Consitution, public health and sanitation and hospitals and dispensaries fall in the State List. Population control and family planning, medical education, adulteration of food stuffs and other goods, drugs and poisons, medical profession, vital statistics including registration of births and deaths, lunacy and mental deficiency are in the Concurrent List.

The Union Ministry of Health and Family Welfare plays a vital role in the national efforts to enable the citizens to lead a healthy and happy life. The Ministry is responsible for implementing many programmes of national importance like family welfare, primary health care services, prevention and control of diseases, etc., which form the main plank of our development efforts. There is our national commitment to attain the goal of "health for all by the year 2000 AD" in accordance with the Alma-Ata Declaration of September 1978.

HEALTH PLANS

The broad objectives of the health programmes so far have been to control and eradicate communicable diseases and to provide curative and preventive health services in rural areas through the establishment of a primary health centre in each community development block and to augment programmes for the training of medical and para-medical personnel. In the overall health development programmes, emphasis is being laid on preventive and promotive aspects by organising effective and efficient health services. The 20-Point Programme pinpoints special thrust on improving the health status of the people. According to the programme, it is proposed to promote family planning on a voluntary basis as a people's movement, substantially augment universal primary health facilities and control leprosy, tuberculosis and blindness, accelerate programme of welfare for women and children and nutrition programme for pregnant women, nursing mothers and children in tribal, hilly and backward areas.

A number of training centres for different categories of health workers, *i.e.*, nurses, sanitary inspectors, para-medical workers, non-medical supervisors, physiotherapists,etc., exist now. The plan of action on the report of the Group on Medical Education and Support Manpower for a three-tier reconstruction of entire health care system has been worked out. The scheme of involvement of community level workers *i.e.*, teachers, postmasters and *gram sevaks*, after a short training, is being implemented.

Voluntary organisations/institutions are also getting financial assistance from Government under grant-in-aid schemes *i.e.*, scheme for improvement of medical services and special health scheme for rural areas for setting up new hospitals/dispensaries in rural areas and extension of existing hospital buildings and also for purchase of equipment. Apart from this, financial assistance is also given to the voluntary organisations for voluntary blood donation programme.

The pattern of investment in different Plan periods is given in table 9.1.

TABLE 9.1 PATTERN OF INVESTMENT

(Rs crore)

Plan Period		Total Plan Investment/ Outlay	Plan Investment on Health	Investment in Health as percentage of Total
First Plan	.....	1,960.00	65.20	3.30
Second Plan	.....	4,672.00	140.80	3.00
Third Plan	.....	8,576.50	225.90	2.60
Annual Plans	.....	6,625.40	140.20	2.10
Fourth Plan	.....	15,778.80	335.50	2.10
Fifth Plan	.....	39,426.20	760.80	1.90
Annual Plan	.....	12,176.50	223.10	1.82
Sixth Plan	.....	97,500.00	1,821.10	1.86
Seventh Plan	.....	1,80,000.00	3,392.89	1.88

ACHIEVEMENTS

Planning development of over three decades has resulted in vastly improved health facilities. The number of doctors and hospital beds has increased by more than two and a half times and that of nurses by more than six times. The number of medical colleges has increased from 30 before the initiation of the First Plan to 125 at present. In rural areas, there were 14,609 primary health centres/subsidiary health centres and 1,02,674 sub-centres as on 31 December 1987. None existed before 1951. Diseases like malaria, tuberculosis and cholera, which used to take a heavy toll of life, have been controlled to varying degrees. No case of plague has been reported in the country since 1967. Smallpox which was a dreadful disease has been eradicated. The general death rate has come down from 27.4 per thousand in 1951 to an estimated 11.1 per thousand in 1986 and life expectancy at birth has increased from 32 in 1941-51 to over 56 in 1981-86. The infant mortality rate has come down from 146 in the 50s to 96 in 1986.

NATIONAL HEALTH PROGRAMMES

MALARIA

National Malaria Eradication Programme of India is the world's biggest health programme against a single communicable disease and continues to be the country's most comprehensive and multifaceted public health activity. With the successful implementation of National Malaria Eradication Programme in 1958, the annual incidence of malaria was drastically reduced from 7.5 crore at the time of independence to about one lakh in 1965. The deaths due to malaria were completely eliminated. Unfortunately, due to various factors these achievements could not be maintained. Resurgence of malaria necessitated renewed vigorous anti-malaria activities and the programme was modified in the context of escalating malaria incidence. The Modified Plan of Operation was implemented from 1 April 1977. Since then, there has been a gradual downward trend in malaria cases and the country recorded only 16.63 lakh incidents in 1987.

FILARIA

The National Filaria Control Programme has been in operation since 1955. It is estimated that 35.3 crore people are exposed to the risk of filariasis. One crore ninety lakh manifest the disease and 2.5 crore have the filaria parasites in their blood.

Activities under the programme at present are confined only to antilarval operations in urban areas where 203 filaria control units provide protection to four crore persons. One hundred and eighty three filaria clinics are functioning. Besides, 12 headquarters bureaux are functioning at the state level. So far, only 236 out of 300 districts in the endemic states, have been surveyed. One hundred and seventy three districts have been found to be endemic for filariasis. Survey work is in progress in other 63 districts.

Training in filariology is being given at three Regional Filaria Training and Research Centres situated at Calicut, Rajahmundry and Varanasi under the National Institute of Communicable Diseases, Delhi.

KALA-AZAR

Kala-azar is endemic in the states of Bihar and West Bengal. Directorate of National Malaria Eradication Programme (NMEP) is monitoring the kala-azar situation in the country. The kala-azar unit of NMEP is regularly collecting kala-azar incidence reports and is keeping a close vigil over the situation.

SMALLPOX

Smallpox was another great killer before 1947. The National Smallpox Eradication Programme was launched in 1962 with emphasis on intensive primary vaccination campaign and revaccination of vulnerable group of population. As a result, the incidence of smallpox was brought down to zero in July 1975. The country was declared to have eradicated smallpox by the International Assessment Commission on 23 April 1977. The whole world has now been declared free from smallpox.

LEPROSY

Leprosy is a major public health and social problem in the country. All the states/UTs are reporting leprosy cases but the endemicity varies from state to state and district to district. About 40 lakh leprosy cases are estimated to be in the country. Of these, 15 to 20 per cent are infectious and an equal number of the cases have deformity. Fifteen to 20 per cent of the children suffer from leprosy.

National Leprosy Control Programme has been in operation since 1955, but it was only after 1980 that it received a high priority. The programme was redesignated as National Leprosy Eradication programme in 1982-83 on the recommendations of an Expert Group Committee. It is implemented as a Centrally-sponsored scheme. The programme is goal-specific and target-oriented with an ultimate aim to achieve eradication of disease by the year 2000 AD. At the end of March 1988, 708 leprosy control units, 943 urban leprosy centres, 277 temporary hospitalisation wards, 252 district leprosy units, 7,400 SET centres, 45 leprosy training centres and 40 sample survey-cum-assessment units had been established in various states/union territories under the programme.

The treatment of leprosy cases with a number of drugs instead of one, has been found highly effective. The Government has recognised the advantages of Multi-Drug Treatment (MDT) over traditional single drug therapy *i.e.*, Dapsone monotherapy. Currently, 70 endemic districts of 160 lakh population with 20 lakh leprosy cases have been brought under MDT. During 1988-89, another 530 lakh population in 30 endemic districts with case load of five lakh are being brought under MDT.

At the end of July 1988, 31 lakh leprosy cases were on record, of which 27 lakh are getting regular treatment. This is likely to increase in the coming years. Forty-five leprosy training centres have been established to cater to the training needs of the programme. So far, over 5,500 medical officers and 2,500 para-medicals have been trained in leprosy control activities.

About 150 voluntary organisations are supplementing the governmental efforts in the fight against leprosy. All the voluntary organisations operate under the direction of National Leprosy Eradication Board. Over eight lakh leprosy cases are on the records of voluntary organisations.

TUBERCULOSIS

Tuberculosis is a major public health problem in the country. As per the National Tuberculosis Sample Survey conducted in the year 1955-58 and limited surveys in subsequent years, about 1.5 per cent population is estimated to be suffering from radiologically active TB disease of the lungs of which ¼th or 0.4 per cent are sputum positive or infectious.

At present district TB centres are functioning in 371 districts to undertake TB Control Programme in association with general health and medical institutions. In addition to it, 335 ordinary TB clinics are functioning mainly in the urban areas. Primary health centres have also been involved actively in TB case detection and treatment activities. In the rural areas, multi-purpose health workers and the village health guides are also being involved in the motivation and health education activities under the programme. There are about 46,000 TB beds available in the country for treatment of serious and emergent TB patients. The National Tuberculosis Institute, Bangalore, which was established in 1959, is engaged in training of the medical and para-medical personnel.

With the inclusion of tuberculosis programme in the 20-Point Programme, a new thrust has been given for the expansion of the essential activities. Targets are being laid for detection of new TB cases each year from 1982-83. During 1985-86, about 13.58 lakh new TB cases against the target of 15 lakh were detected. Duration of treatment for tuberculosis patient with conventional regimens is of one to two years and is believed to be one of the important causes for irregularity and premature stoppage of the treatment by the patients. With the advent of *Rifampicin* and *Pyrazinamide*, it has become possible to reduce the duration of treatment to six to eight months. Short-course chemotherapy drug regimens containing Rifampicin and Pyrazinamide are being introduced in district TB programme in a phased manner under National TB Control Programme.

SEXUALLY TRANSMITTED DISEASES

In order to combat the STD (sexually transmitted diseases) on a war footing, the Centre and the state governments have established more than 300 STD clinics throughout the country. These clinics are mostly located at the district hospital headquarters, but in some states like Tamil Nadu and Himachal Pradesh, the STD clinics are located at the periphery level, *viz.*, sub-divisional headquarters.

To provide training facilities to the in-service medical and para-medical personnel in venereology, the Government is running two training centres, namely, the Institute for the Study of Sexually Transmitted Diseases, Madras Medical College, Madras and the STD Training and Demonstration Centre, Safdarjang Hospital, New Delhi. Five teaching-cum-training centres at Calcutta, Delhi, Hyderabad, Madras and Nagpur conduct refresher courses in venereology.

BLINDNESS

The National Programme for Control of Blindness was launched in 1975-76 which incorporates the earlier trachoma control programme started in 1968. About 450 lakh persons are suffering from visual impairment and over 90 lakh are blind, including about 60 lakh who can be cured by operations. The national programme aims at educating people on eye care, providing ophthalmic services to rural areas through mobile ophthalmic units and establishing a permanent infrastructure for eye health services within the existing public health delivery system.

Eighty fully-equipped general mobile units are functioning in different parts of the country. Each unit carries out from 1,500 to 2,000 intra-ocular operations every year. The ophthalmology departments of 60 medical colleges have been developed to become community ophthalmic centres. Nine institutes of ophthalmology have achieved the status of regional institutes. Apart from the mobile units, 404 hospitals have been upgraded to start an eye unit in each district. So far, 3,716 block level primary health centres have been provided with ophthalmic equipment. Ophthalmic assistants are being posted in these centres. The existing nine institutes of ophthalmology and Dr Rajendra Prasad Centre for Ophthalmic Sciences, New Delhi, are being assisted for manpower development, research and referral services. The training courses for ophthalmic assistants have been started in 37 centres. Forty eight medical teaching institutions and five voluntary organisations have been financially assisted in establishment of eye banks for registration of donors, collection and distribution of donor material for corneal transplantation.

Eye ointment tubes are being distributed to the states to control trachoma and associated infections. The Government gives financial assistance of Rs 12,000 per eye camp to voluntary agencies and *panchayat* bodies at Rs 60 per intra-ocular operation.

CANCER

At present 150 general hospitals, including medical college hospitals offer facilities for cancer treatment by surgery, radiotherapy and chemotherapy. Teletherapy cobalt units for treatment of cancer are proposed to be installed in all the 106 medical colleges in the country within the Seventh Five Year Plan in a phased manner. At present, 54 medical colleges have cobalt therapy, and altogether, cobalt therapy all over the country is in 99 different institutions including government and non-government. Besides this, ten regional cancer centres and eight other institutions have taken up the research activities on cancer. The Indian Council of Medical Research has established eight cancer research projects. Places like Bombay, Bangalore and Madras have both population-based and hospital-based cancer registry projects. In Delhi and Bhopal, there is only population-based cancer registry. Chandigarh, Dibrugarh and Trivandrum have only hospital-based registry. During the year 1987-88, Government had arranged three workshops on cancer prevention and control with the help of WHO Biennium budget. The health education material on cancer control developed and pretested by Ministry of Health has been circulated to all Hindi speaking states and is available for wide circulation for medical and para-medical personnel, etc. At the Centre there is a Cancer Control Board under the chairmanship of the Minister of Health and Family Welfare. Likewise, 15 states and union territories have also set up state cancer control boards.

GOITRE

Endemic goitre has been recognised as an age-old health problem of the Himalayan belt. With recent extensive studies, it is now established that about 14.5 crore people in the country are exposed to iodine deficiency disorders. In 25 states till date, the survey findings are available in respect of 126 districts, out of which 115 have been found to be endemic for iodine deficiency disorders. It is estimated that about four crore people in India are suffering from some of the manifestations of iodine deficiency disorders.

The National Goitre Control Programme is being monitored as a key item of the 20-Point Programme. The Government has decided to iodise the entire edible salt in the country in a phased manner by 1992. The production of iodised salt has registered a steep rise during the last two years. A record production of 16.87 lakh MT was achieved in 1987-88 against 7.72 lakh MT during 1986-87. With a view to ensuring proper monitoring and effective implementation of the National Goitre Control Programme, the states/union territories have been advised to establish a Goitre Cell. Presently, 16 states/union territories have established such cells.

JAPANESE ENCEPHALITIS

After the occurrence of Japanese Encephalitis (JE) epidemic in different states of the country in 1977-78, the Government reached an agreement with the Government of Japan for the manufacture of Japanese Encephalitis vaccines. The vaccine is being manufactured at CRI, Kasauli, and is undergoing quality control tests. After satisfactory completion of all tests the vaccines will be field-tested on 5,000 people in 1988-89. CRI is expected to produce about 10 lakh doses in 1988-89 and 20 lakh doses by 1990. During 1984, Japanese Encephalitis incidence was 3,323 with 1,390 deaths, during 1985, the incidence was 2,490 with 913 deaths and during 1986, 7,500 with 2,627 deaths. The corresponding incidence of JE in 1987 was 3,515 attacks with 1,346 deaths and for 1988, 4,939 and 1,635 respectively.

MEDICAL RELIEF AND SUPPLIES

HOSPITALS AND DISPENSARIES

Medical services are primarily provided by the Central and state governments. Certain charitable voluntary and private institutions also provide medical relief. The district and sub-divisional hospitals are being further developed by removing deficiencies in referral services. The number of hospital beds (both government and private) was 5.59 lakh in 1986-87 as compared to 1.13 lakh in 1951-52. The bed-population ratio is now 0.72 per 1,000 population, which was 0.24 at the commencement of the First Plan. The number of registered doctors at the end of 1987 was 3.25 lakh and the number of nurses at the end of 1986 was 2.07 lakh.

CENTRAL GOVERNMENT HEALTH SCHEME

The Central Government Health Scheme started in July 1954 to facilitate the medical treatment of the Central Government employees and their families in Delhi, was gradually extended to other cities and now it covers Allahabad, Bombay, Calcutta, Madras, Bangalore, Hyderabad, Kanpur, Meerut, Patna, Nagpur, Pune, Jaipur, Ahmadabad and Lucknow. The benefits of the scheme have been extended to; (a) ministers and state ministers of the Central Government and their families; (b) members of Parliament, ex-members of Parliament and their families; (c) retired Central Government servants and widows of Central Government pensioners and persons retired from All India services and their families; (d) ex-Vice Presidents and ex-Governors and their families; (e) retired judges of Supreme Court and High Courts and members of their families; (f) employees of certain selected semi-Government and autonomous bodies (in Delhi only); (g) members of staff side of National Council of Joint Consultative Machinery (JCM) and their families; (h) members of general public (in Delhi only), and (i) accredited journalists.

The scheme which started with 16 allopathic dispensaries in 1954 covering about 2.3 lakh beneficiaries, has now 298 dispensaries/hospitals in various systems of medicine like *Ayurveda, Unani, Siddha, Homoeopathy* and *Allopathy* and provides service to about 36.61 lakh beneficiaries. There are also three yoga centres under the scheme in Delhi. Apart from this, the scheme at various cities has all the arrangements for hospitalisation and specialist consultation of beneficiaries with private and state government hospitals. One hundred and sixty two Government/private hospitals have been recognised under the scheme at Bombay, Madras, Calcutta, etc., where the beneficiaries can get specialised treatment and hospitalisation facilities. Apollo Hospital, Madras is in the list of recognised hospitals under the scheme for coronary by-pass surgery for which the country has only very few hospitals at present. National Heart Institute and Batra Hospital, both in New Delhi are the latest addition to the referral hospitals for specialised treatment, for coronary by-pass surgery. Admission in these hospitals for specialised treatment for CGHS beneficiaries has to be with the prior approval of Director (CGHS).

PRIMARY HEALTH CENTRES

Primary health care is being provided to the rural population in the country through a network of 1,12,103 sub-centres, 16,954 primary health centres and 1,469 community health centres and at village level by 5.66 lakh trained *dai* and 3.94 lakh health guides besides a large number of rural dispensaries working under state governments/union territory administrations. It is proposed to expand these facilities further in a phased manner so as to have one primary health centre for every 30,000 population (20,000 in hilly and tribal areas), a sub-centre for every 5,000 population (3,000 population in hilly and tribal areas) by 31 March 1990 and a community health centre for about every one lakh population by 2000 AD.

INDIAN SYSTEMS OF MEDICINE

Indian Systems of Medicine (ISM) include all the non-allopathic systems of medicine and regimens excluding Homoeopathy, *viz.*, Ayurveda, Siddha, Unani, Nature Cure, Yoga and *Amchi*. About 3.05 lakh registered practitioners are practising, mostly in rural areas, under Indian medicine systems. There are 13,223 dispensaries and 1,689 hospitals/wards of ISM with over 19,239 beds. There are 98 Ayurvedic colleges, 17 Unani colleges and two Siddha colleges functioning in the country in both Government and non-government sectors. The annual admission capacity for under-graduate education in Ayurveda is 3,882, in Unani 676 and in Siddha 150.

Besides the National Institute of Ayurveda, Jaipur, the two full-fledged post-graduate institutions in Ayurveda at the Banaras Hindu University, Varanasi, and Gujarat Ayurveda University, Jamnagar, there are twenty colleges having post-graduate education facilities in Ayurveda (including four non-government colleges in Maharashtra), two in Unani Medicine and one in Siddha. The admission capacity for post-graduate courses in Ayurveda is 253, Unani Medicine 35 and Siddha 20.

The Government has set up the National Institute of Unani Medicine at Bangalore in collaboration with Government of Karnataka. The Institute has been registered as an autonomous body under the Karnataka Societies Regulation Act, 1960.

The Central Council of Indian Medicine, New Delhi, regulates the practice and education of Ayurveda, Unani and Siddha medicine.

HOMOEOPATHY

There are 95 institutions imparting under-graduate education in Homoeopathy of which 69 are in the non-government sector. The National Institute of Homoeopathy at Calcutta is imparting education at degree and post-graduate levels. Presently, it is offering the highest diploma level education after completion of the four and-a-half years' diploma course in Homoeopathy. Forty-five institutions are affiliated to universities and the remaining 50 to boards. The admission capacity for degree courses is 2,664 and diploma courses 3,249. The Central Council of Homoeopathy regulates the educational standards and professional practice in the system. There are 129 hospitals/wards with 3,437 beds, 6,636 dispensaries and 1.31 lakh practitioners of Homoeopathy in the country.

There are two colleges imparting training in Naturopathy in the non-government sector with 50 admissions per year in all. Only one college is affiliated to a university. Besides this, the National Institute of Naturopathy has been set up at Pune in Maharashtra as an autonomous organisation.

RESEARCH

The four research councils *viz.*, (i) Central Council for Research in Ayurveda and Siddha (CCRAS), (ii) Central Council for Research in Unani Medicine (CCRUM), (iii) Central Council for Research in Homoeopathy (CCRH) and (iv) Central Council for Research in Yoga and Naturopathy (CCRYN) are registered societies and are fully financed by the Government of India.

CCRAS, through its five central major research institutes, eight regional research institutes, 10 regional research centres and 67 research units and enquiries is engaged in multifaceted research programmes, primarily in the field of applied research, drug standardisation, multi-disciplinary drug research, health care research, literary research and research on indigenous contraceptives.

CCRUM has one central research institute, seven regional research institutes, 10 clinical research units, six drug standardisation research units, one literary research unit, a central herb garden, an information centre and two family welfare research enquiries.

CCRH has one central research institute, two regional research institutes, 33 clinical research units (including 20 in tribal areas), four drug proving research units, two drugs standardisation units, three clinical verification units, a medicinal plant survey unit, a grant-in-aid unit to conduct clinical research, drug proving, drug research and drug standardisation, literary and survey research as well as a documentation and information centre.

CCRAS is publishing quarterly journal of research in Ayurveda and Siddha and the bulletins of Indian Institute of History of Medicine and a bulletin on *Medico Ethno-Botancial Research.* The Council has also released a monograph entitled *Pharmacognosy of Indian Medicinal Plants* in two volumes. The CCRUM has published a revised edition of *Risala-e-Judia* and Arabic text of *Kulliyat Ibn-e-Rushd.*

CCRYN is providing assistance to one naturopathy and 11 yoga institutes. The Central Research Institute for Yoga, an autonomous institute is Centrally assisted. It is engaged in fundamental research on various yogic practices and clinical research. *Vishwayatan yogashram*, an aided private registered society provides training in yoga. Besides, there is a number of training centres for yoga in different parts of the country mostly run by voluntary organisations.

INDIAN MEDICINES PHARMACEUTICAL CORPORATION

The Government has established a public sector undertaking *viz.*, Indian Medicines Pharmaceutical Corporation Ltd. with the primary objectives of producing quality Ayurvedic, Unani and Siddha medicines. The factory and the registered office are situated at Mohan, Almora district. This is a joint venture. The Uttar Pradesh government, too, is participating in this project through the Kumaon Mandal Vikas Nigam, a public sector undertaking under the state government. The Corporation has started commercial production since 1983-84. A large number of medicines are at present being produced at the factory to supply primarily to CGHS and research councils under the Ministry.

PHARMACOPOEIAL LABORATORIES

The Pharmacopoeial Laboratory of Indian Medicine and the Homoeopathic Pharmacopoeia Laboratory, both situated at Ghaziabad, are subordinate offices of the Ministry of Health. The Pharmacopoeial Laboratory for Indian Medicine is engaged in laying down the standards of single drugs and compound formulations of ayurvedic, unani and siddha systems of medicine.

The Homoeopathic Pharmacopoeia Laboratory established in 1975 functions as a standard-setting-cum-drug-testing laboratory at national level. This laboratory also works out various standards for Homoeopathic drugs for the purpose of Homoeopathic Pharmacopoeia of India.

DRUGS

The Drugs and Cosmetics Act, 1940, as amended from time to time, regulates the import, manufacture, sale and distribution of drugs and cosmetics in the country. Under the Act, the import, manufacture and sale of sub-standard, spurious, adulterated or misbranded drugs are prohibited. The Government is empowered to check the quality of imported drugs, coordinate the activities of the states, lay down regulatory measures and standards of drugs and grant approval for the import or manufacture of new drugs. The control over the quality of drugs, which are manufactured, sold and distributed in the country is exercised by the state governments. Zonal offices of the Central Drugs Standards Control Organisation at Bombay, Calcutta, Ghaziabad and Madras maintain close liaison with the state organisations for enforcement of the provisions of the Drugs and Cosmetics Act, 1940. The Central Drugs Standards Control Organisation arranges training programmes for personnel concerned with drugs standard control.

The Central Drugs Laboratory, Calcutta functions as the testing laboratory for imported drugs as well as analytical quality control of drugs manufactured within the country on behalf of the Centre and state drug control authorities and is the appellate laboratory under the Drugs and Cosmetics Act to test samples of drugs sent to it by courts. The Central Indian Pharmacopoeia Laboratory, Ghaziabad tests samples of non-biological drugs included in the Indian Pharmacopoeia.

PRICES

Prices of bulk drug formulations have been under statutory control since 1962, but effectively from 1970. The Drug (Prices Control) Order, 1970 has now been replaced by Drug (Prices Control) Order, 1979. As a result of these measures, the wholesale price index of drugs and medicines has been kept steady *vis-a-vis* other commodities.

VACCINE PRODUCTION

India is self-sufficient in the production of all vaccines required for immunization programme except polio and measles. The polio vaccine is imported in bulk in a concentrated form. It is diluted and ampouled at the Haffkine Bio-Pharmaceutical Corporation Ltd., Bombay. The indigenous production of polio vaccine is being taken up.

IMMUNIZATION PROGRAMME

Recognising the potential of immunization as a low cost efficient technology for child survival and prevention of disabilities, the Government started the Expanded Programme on Immunization (EPI) in 1978 with the objective of reducing the morbidity, mortality and disability due to diphtheria, whooping cough, tetanus and tuberculosis by making free vaccination services easily available to all eligible children and expectant mothers. Polio vaccine was included in the programme during 1979-80 and Tetanus Toxide (school children) in 1980-81. BCG was brought under the purview of EPI in 1981-82 and Measles vaccine was initiated in 1985-86.

The Immunization Programme is a long-term one. The immunization services are provided through the existing health-care delivery system and there is no separate cadre of field workers. The services are available in hospitals, dispensaries, MCH clinics and family welfare centres in the urban areas and primary health-centres and sub-centres in the rural areas. The health workers also organise out-reach sessions in the sub-centres and villages, which are not within the easy reach of the health centres.

Universal Immunization Programme was started in the country in 1985-86 with the objective to immunise 85 per cent of eligible infants against six preventable diseases and to cover cent per cent pregnant women by 1990. The total number of infants planned to be immunized is 822 lakh and expectant mothers 925 lakh during the Seventh Plan period. Additional inputs are being provided and infrastructure and training in immunization are rapidly expanded during the Seventh Plan period to achieve the goal. Universal Immunization Programme was taken up in 30 selected districts. It has been extended to 307 districts and by the end of the Seventh Plan, it will cover the rest also.

OBJECTIONABLE ADVERTISEMENT

The Drugs and Magic Remedies (Objectionable Advertisement) Act, 1955 prohibits the publication of objectionable advertisements relating to sexual stimulants, alleged magic cures for venereal disease and diseases peculiar to women. The Act amended in 1963, also prohibits the import and export of objectionable advertisements and authorises the customs and postal authorities to intercept articles suspected to contain objectionable advertisements.

MEDICAL STORES ORGANISATION

The Medical Stores Organisation with seven units at Bombay, Calcutta, Guwahati, Hyderabad, Madras, Karnal and Delhi, is responsible for procurement and supply of quality medical stores including equipment to about 1,800 regular indentors over the country at the most economical rates. The Organisation has three chemical laboratories attached to the Medical Stores/Depots at Bombay, Calcutta and Madras. Most of the clients of the Medical Stores Organisation are small hospitals and dispensaries located in rural or sub-urban areas. Apart from general supplies, it receives supplies from international agencies like UNICEF, SIDA, WHO, USAID, etc., and distributes them to various parts of the country. Various drugs and other commodities required for running the national health programmes like Leprosy Eradication Programme, TB Control Programme, Malaria Eradication Programme and Family Welfare Programme are handled by this Organisation. It also arranges relief supplies to the victims of natural and national calamities like droughts, floods, cyclones, wars, agitations, etc., in all parts of the country. The Organisation has also taken over the responsibility of making supplies of medical stores to the Central Government Health Services (CGHS) throughout the country. It also arranges gift supplies to foreign countries at the instance of the Ministry of External Affairs.

At the factories of the Organisation at Bombay and Madras, a large number of formulations such as tinctures, bandages, syrup, tablets and ointment are manufactured to meet the requirement of indenting units.

FOOD ADULTERATION

The Prevention of Food Adulteration Act, 1954 has been in force since 1 June 1955 with the objective of ensuring that food articles sold to the consumers are pure and wholesome. It also aims at preventing fraud or deception and encouraging fair trade practices. The Act was amended in 1964 and thereafter in 1976 for plugging the loopholes and for making punishments more stringent. A minimum imprisonment of six months with a minimum fine of Rs 1,000 is envisaged under the Act for cases of proven adulteration whereas for the cases of adulteration which may render the food injurious to cause death or such harm which may amount to grievous hurt, the punishment may go up to life imprisonment and a fine which shall not be less than Rs 5,000.

The administration of the Prevention of Food Adulteration Act and the provisions thereunder is the primary responsibility of the state governments and the union territory administrations. The Central Government lays down broad policies in this regard, carries out the necessary amendments to the PFA Act and Rules, and advises the state governments and the union territory administrations in the effective implementation of the programme. For advising the Centre or the state governments with regard to implementation of the Act, there is a statutory body, namely, the Central Committee for Food Standards. The Committee is assisted by various technical sub-committees. The Act is, by and large, implemented by the local bodies. The states have been advised to establish separate food cells having properly qualified and experienced staff.

There are four Central food laboratories *viz.*, Central Food Laboratory, situated at CFTRI, Mysore; Central Food Laboratory situated at Food Research and Standardisation Laboratory, Ghaziabad; Central Food Laboratory at State Public Health Laboratory, Pune and Central Food Laboratory, Calcutta. Samples are sent to these appellate laboratories by the courts. Statements of facts contained in the report given by the laboratories are considered to be final and conclusive evidence.

There are 75 food laboratories under the control of state governments/local bodies. The samples lifted by the food inspectors are sent to these laboratories and on the basis of the reports, prosecutions are launched in the courts. The Government has assisted the states and union territories in equipping these laboratories. Under joint FAO/WHO Food Standards Programme, Codex Alimentarius Commission has been established to formulate world-wide standards for food. India is also a member of this body. A National Codex Committee has been set up under the Ministry of Health and Family Welfare to formulate the Indian viewpoint on various matters concerning international food standards programme.

Training being an important component of the programme for prevention of food adulteration, the Directorate General of Health Services organises in-service training programme for different functionaries responsible for its implementation. Food inspectors, analysts and the senior officers concerned with the implementation of the Act in states are provided training. The Directorate General of Health Services organises training in collaboration with various institutes in the country. Fellowships are also provided to the analysts by WHO for the purpose of giving them training in sophisticated methods of analysis.

NUTRITION

The major nutritional problems are: protein energy malnutrition, Vitamin A deficiency and anaemia. Goitre is widely prevalent while fluorosis and lathyrism are localised to certain regions. State nutrition divisions have been set up in the health directorates of 17 states and two union territories to assess the diet and nutritional status in various groups of population, conduct nutrition education campaigns, supervise supplementary feeding programmes and other nutritional ameliorative measures. Surveys conducted by the state nutrition divisions and the National Nutrition Monitoring Bureau under ICMR have revealed that the protein energy malnutrition and other deficiency disorders are prevalent in the large section of the population. The most affected are young children, pregnant and lactating mothers.

To combat the problem, various nutrition programmes are being implemented by the Government. The Integrated Child Development Services Scheme (ICDS) provides a package of services which includes supplementary feeding, nutrition and health education, referral services, immunization, health check-up and non-formal education. Till mid 1988 there were 1,738 projects in the country including 218 in the state sector.

The special nutrition programme which provides supplementary nutrition is being gradually merged with the ICDS. The mid-day meal programme is meant for the primary school children.

To prevent blindness among children due to Vitamin A deficiency in the diet, a concentrated dose of Vitamin A is given orally every six months through peripheral health workers. Similarly, to prevent nutritional anaemia among women and children, combined tablets of iron and folic acid are being distributed through health centres. To promote breast-feeding, as means towards better nutrition, the Government has adopted the National Code for Protection and

Promotion of Breast-Feeding which envisages banning the advertisement and promotion of commercial infant foods.

The National Institute of Nutrition, Hyderabad and the All India Institute of Hygiene and Public Health, Calcutta are the principal organisations in India for nutrition research and training of nutrition workers.

MEDICAL EDUCATION AND RESEARCH

The Indian Medical Council functions as a guardian for the maintenance of standards in medical education. To promote medical education, 106 medical colleges, as against 30 in 1950-51, besides 25 dental colleges and 11 other institutions are functioning in the country. Establishment of new medical colleges and expansion of the existing ones had raised the admission capacity from 2,500 in 1950-51 to over 12,958 in 1984-85.

Foreign assistance is being received in the form of fellowships from WHO, Commonwealth Foundation and Colombo Plan agencies. Such assistance is useful for meeting the training needs of personnel under various medical and public health programmes. There are over 340 schools of nursing attached to all major hospitals. Approximately 7,750 nurse midwives qualify from these schools. These schools are affiliated to respective state nursing councils. Entrance requirement is 12th pass preferably with science.

There are 411 auxiliary nurse midwives (ANM), female health workers (FHW) schools and 44 promotional training schools for lady health visitors with an admission capacity of 20,345 and 3,191 respectively, functioning in the country. The ANM who qualify from these training schools will be deployed at sub-centre level. The minimum educational qualifications for ANM/FHW course is 10th pass while the senior ANMs with five years' experience are deputed for promotional training of six months duration. There are 19 colleges of nursing attached with various universities offering BSc (Nursing) and 10 colleges offering post-basic BSc (Nursing). Approximately 400 nurses obtain BSc degree and 200 get post-basic BSc degree in nursing.

Apart from certificate and degree programmes, there are five colleges *i.e.*, SNDT, Bombay, RAK College of Nursing, Delhi, College of Nursing, Vellore, College of Nursing, Chandigarh, and College of Nursing, Hyderabad, which offer post-graduate degree in nursing *i.e.*, Masters in Nursing. Two states Gujarat and Kerala, are in the process of starting Master's degree in Nursing. About 30-35 nurses obtain Master's degree every year. The Indian Nursing Council, which controls the standards of nursing education, conducts inspections for all schools and colleges. The Council has developed short-term courses of six months in several clinical specialities.

MEDICAL RESEARCH

The Indian Council of Medical Research (ICMR) initiates, developes and co-ordinates medical research in the country. It is cent per cent financed by the Central Government. The Council maintains, besides a number of semi-permanent units, 18 permanent research institutes and centres. These are: National Institute of Nutrition, Hyderabad; National Institute of Virology, Pune; Tuberculosis Research Centre, Madras; National Institute of Cholera and Enteric Diseases, Calcutta; Institute of Pathology, New Delhi; National Institute of Occupational Health, Ahmadabad; Institute for Research in Reproduction, Bombay; Central JALMA (Japanese Leprosy Mission for Asia) Institute for Leprosy, Agra; Institute of Immunohematology (formerly Blood Group Reference Centre), Bombay; Vector Control Research Centre, Pondicherry; Malaria Research Centre, Delhi; Institute of Research in Medical Statistics, New Delhi; Institute of Research in Medical Statistics, Madras; Laboratory Animal Information Services, Hyderabad; Food and Drug Toxicology Centre, Hyderabad; Cytology Research Centre, New Delhi; Enterovirus Research Centre, Bombay, and Rajendra Memorial Research Institute of Medical Sciences, Patna. In addition, regional medical research centres have also been established, one each at Port Blair, Bhubaneshwar, Dibrugarh and Jabalpur.

There are two statutory bodies to conduct research in various branches of medical sciences. These are: All India Institute of Medical Sciences, New Delhi and Post-Graduate Institute of Medical Education and Research, Chandigarh. There is also an All India Institute of Speech and Hearing at Mysore. Clinical facilities are available at all these institutes. The Directorate General of Health Services supports selected research projects in relation to kala-azar, plague, etc. Financial assistance is also provided to various bodies for conducting research. At present, two projects, Kala-azar Unit, Patna and Plague Surveillance Unit, Bangalore, are functioning.

Some of the institutions working in the field of various specialised medicines are: Indian Cancer Research Centre, Bombay; Cancer Institute, Madras; Chittaranjan Cancer Research Centre, Calcutta; Rotary Cancer Hospital at the All India Institute of Medical Sciences, New Delhi; National Tuberculosis Institute, Bangalore; Vallabhbhai Patel Chest Institute, Delhi; Central Leprosy Teaching and Research Institute, Chingleput (recognised as WHO Regional Centre); National Institute of Communicable Diseases, Delhi; All India Institute of Hygiene and Public Health, Calcutta, Rural Health Unit and Training Centre, Singur; Urban Health Centre, Chetla and Central Drugs Laboratory, Calcutta.

The Central Research Institute, Kasauli is the biggest and most important producer of immunobiologicals, *viz.*, DPT, DT, TT, anti-typhoid, anti-rabies, yellow fever vaccine and cholera vaccine and also for anti-sera and diagnostic reagents/ antigens. This is the only Institute producing yellow fever vaccine in South-East Asia region. The Institute trains candidates sponsored by WHO, other international agencies and vaccine production organisations in the country in the techniques of production of various vaccines and sera and their quality control. It runs regular courses of B Sc, M Sc and M Phil (Micro). It also conducts short-term courses for diagnosis, prevention and treatment of rabies, quality control of vaccines and sera and training course for the drug control officers. The Institute conducts research to improve the techniques of production and quality control of the vaccines. Efforts are being made to develop newer vaccines like measles vaccine.

The Pasteur Institute of India, Coonoor, Nilgiris is engaged in conducting research in rabies, influenza, other respiratory virus infections, etc., and in the production of anti-rabies vaccine and other vaccines. The DPT project was being executed by the Institute under the expanded programme on immunization during the Sixth Plan period. This is a cent per cent Centrally-assisted plan project which was started in 1978-79.

HEALTH EDUCATION

The Central Health Education Bureau is an apex organisation in health education in the Directorate General of Health Services. The Organisation was set up in 1956 to coordinate and promote health education through various divisions to implement its activities. The activities include interpreting the plans and programmes of the Government, to train key health and community welfare workers in health education, to prepare and distribute health education material to be adopted by states and other agencies, to carry out research in behaviour changes of the community in relation to health practices, to evolve effective methodology for training, to render technical assistance to official and non-official agencies in the field of health education, to develop health education syllabi for different age groups of school children and teacher training courses, and to cooperate and collaborate with international agencies in promoting health education activities.

The Bureau deals with the development of health education bureaux in the states and union territories. So far 25 states and six union territories have set up health education bureaux. One hundred and thirteen district health education units have also been set up. The Bureau keeps close liaison with all health education units and has been providing technical guidance. The Bureau took up the media activities since its very inception to interpret plans and programmes of the Government. It now publishes four journals namely: *Swasth Hind* (English monthly), *Arogya Sandesh* (Hindi monthly), *DGHS Chronicle* (English quarterly) and *Swasthya Shiksha Samachar* (Hindi quarterly).

The Bureau brings out printed publicity material for various national health programmes, besides prototype health education material to be adopted by the states in the regional languages according to their needs.

The Bureau provides communication and media support to the various national health programmes. It maintains liaison with AIR and Doordarshan for broadcasting and telecasting health education programmes. It organises exhibitions and helps in production of films, Radio and TV spots on health.

The Research and Evaluation Division of the Central Health Education Bureau is engaged in carrying out researches related to behaviour of the community in relation to acceptance of health practices. The Division has so far completed 74 research studies in relation to malaria, smallpox, STD, leprosy, nutrition, water supply, expanded programme on immunization and training programme. Besides, four other research studies are in progress. Research Division has also brought out nine technical papers/reports. The Division also trains health professionals in research methodology under which six training courses have been conducted.

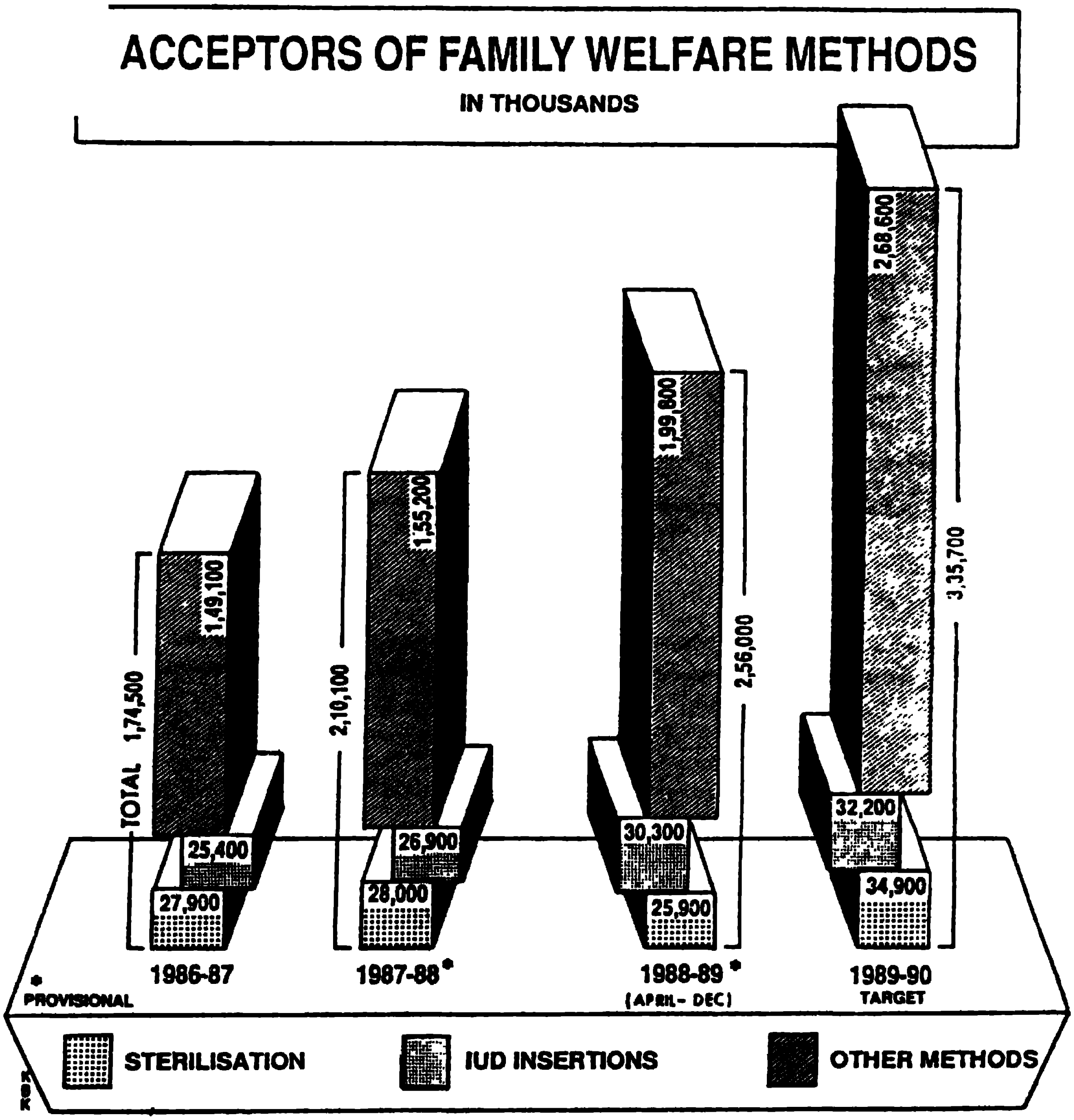
The Bureau conducts a post-graduate Diploma in Health Education affiliated to the University of Delhi and recognised by the Medical Council of India. It also conducts two courses of two months' duration leading to certificate in health education and nine other in-service courses for medical and para-medical personnel from all over the country.

The School Health Education Division of the Central Health Education Bureau is monitoring a Centrally-sponsored national school health service scheme, since April 1977. The objective of the scheme is to provide school health services to the students of primary classes in rural areas through the network of primary health centres. It is also working with the NCERT, Board of Secondary Education and UGC to integrate health eduction in school teacher education and university curricula and text books.

FAMILY WELFARE

One of the most crucial problems facing the nation, today, is the burgeoning population which has been growing at an alarming rate. By 1981, India's population had doubled itself since 1947. Ever since it is increasing by about 150 lakh every year. Such a rapid increase in the population has very serious repurcussions on the socio-economic development of the country. Varying social customs and beliefs favour large family which impede the process of change which could accelerate the adoption of modern methods of contraception. A universal desire to have at least one or two male children and the 'mean age' of marriage of women at 18.3 years also become contributory factors to large families. In spite of this, India is committed to attaining the twin goals of 'Health For All' and a 'Net Reproduction Rate of Unity' by the year 2000 A.D. through the universal provision of comprehensive primary health care services to all and an easy access to family planning, maternal and child health-care facilities.

In keeping with the democratic traditions of the country, the Family Welfare Programme seeks to promote on a voluntary basis, responsible and planned parenthood with two-child norm, male, female or both, through independent choice of family welfare methods best suited to the acceptors. Family welfare services are offered through the total health-care delivery system. People's participation is sought through all institutions, voluntary agencies, opinion leaders, people's representatives, government functionaries and various other structures and influential groups. Imaginative use of the mass media and inter-personal communication is resorted to for explaining the various methods of contraception and removing socio-cultural barriers wherever they exist. As a result of this approach, the number of acceptors of various methods of family welfare has started to register progressive increase over the years.



ACCEPTORS OF FAMILY WELFARE METHODS

IN THOUSANDS

The Family Welfare Programme which began as a people's movement, continues to be implemented on a voluntalry basis. Maternal and child health-care, family welfare, women's rights and nutrition are integral to it. The strategy being followed is constantly tailored to cater to the needs of the changing society.

IMPLEMENTATION MACHINERY

The programmes are implemented through the state governments for which cent per cent Central assistance is provided. In rural areas, the programme is being further extended through a network of primary health centres and sub-centres. The Sixth Plan envisaged the establishment of 37,940 additional sub-centres during 1980-85, of which about 35,774 sub-centres have been established and it is proposed to establish another 54,883 sub-centres during the Seventh Plan. Maternal and child health-care and expanded programme of immunization are also a part of the family welfare programme.

The Central Family Council advises on family welfare programmes at the national level. A number of Central committees like the Research Coordination Committee, have been set up to study the progress of research programme.

PERFORMANCE

Since the inception of the programme, 637 lakh sterilisations and 268 lakh IUD insertions had been done, giving a rate of 80.3 per thousand population for sterilisation and 33.8 for IUD insertions up to 31 March 1988.

Nirodh, besides being provided free is also sold under the social marketing programme which is being operated through a network of over three lakh retail outlets of nine leading consumer goods, pharmaceutical and oil companies. Under the free distribution scheme besides Nirodh, Jelly Cream tubes are also distributed.

The oral pill programme under free scheme was extended to all the urban centres, including those run by local bodies and voluntary organisations. Besides this, social marketing of oral pill has also been undertaken with the help of four pharmaceutical companies on zonal basis. Oral pills are being sold under the social marketing programme under the brand name 'Mala-D'.

IMPACT OF THE PROGRAMME

It is estimated that 39.8 per cent of 13.57 crore eligible couples whose wives are in the reproductive age group of 15-44, were protected by one or another of the approved methods of family welfare as on 31 March 1988. As a result, 953 lakh births had been averted.

MEDICAL TERMINATION OF PREGNANCY

The programme of medical termination of pregnancy through well-trained doctors in well-equipped approved hospitals, is essentially a health-care measure. But in a way, it supplements the family welfare programme as it provides for legalised abortion in cases of contraceptive failures also. A good proportion of the acceptors of abortion go in for some form of contraception like sterilisation, IUD, etc. The Medical Termination of Pregnancy Act, 1971 is in operation since April 1972.

MATERNAL AND CHILD HEALTH PROGRAMME

Care of mothers and children and vulnerable groups of the society, plays a pivotal role in family welfare programmes. The Maternity and Child Health Programmes (MCH) are directed towards effective ante-natal care, ensuring safe and aseptic delivery and appropriate post-natal care, initiation and maintenance of breast-feeding, timely immunization against common infectious diseases, control of diarrhoea, attention to growth and provision of basic medical care.

Infrastructure of health is being extended and manpower being trained to achieve these objectives of MCH care. To provide specialised paediatric care, paediatric units in districts, sub-divisional hospitals and newly set-up units of district hospitals have been and are being equipped. A sum of Rs 33 crore had been provided during 1987-88 for procurement of vaccines and MCH drugs for immunising children and mothers against diseases and preventing nutritional anaemia. An amount of Rs 5 crore had been provided for the programme of control of diarrhoeal diseases among children through one rehydration therapy during 1987-88. This programme had been initiated during 1986-87 and there is a provision of Rs 25 crore for this new programme during the Seventh Plan.

TRAINING OF MULTI-PURPOSE WORKERS

The question of more effective coverage of population and coordinative working was considered by the Executive Committee of Central Family Planning Council in 1972, which led to formation of a package of health and family welfare services at the peripheral level by multi-purpose health workers. Under this scheme, the state-level health administrators were trained at the National Institute of Health and Family Welfare in the concept and philosophy of the multi-purpose workers' scheme. The district level medical officers and key-trainers of health and family welfare training centres were trained at Central training institutes.

At present, Family Welfare Training and Research Centre, Bombay; Central Health Education Bureau, New Delhi; National Institute of Health and Family Welfare, New Delhi and Gandhigram Institute of Rural Health and Family Welfare Trust are undertaking this training. The training of staff working at the primary health centres *i.e.*, medical officers, health supervisors and block extension educators, takes place at 47 Health and Family Welfare Training Centres (H&FWTCs) distributed all over the country. From 1982 onwards, the H&FWTCs were also asked to take up basic training of health workers (male).

SPECIAL SCHEMES

Four schemes, namely—all India hospitals post-partum programme at district and sub-district level hospitals and PAP smear-test facilities in medical colleges selected for this purpose; revamping of organisational set-up in urban slums of the country; sterilisation beds scheme and renovation of IUD room at rural family welfare centres attached to primary health centres, are being implemented as special schemes.

The post-partum programme is a maternity-centred-hospital-based approach to family welfare programme and, now, covers 554 medical institutions at national, state and district levels. These include 104 medical colleges and two post-graduate institutions. Besides, 74 medical colleges are also implementing PAP smear-test facilities programme for early detection of cervical cancer among acceptors of family welfare methods. The purpose of extension of the post-partum programme to sub-district hospitals is to provide the maternal and child health-care services in rural and semi-urban areas so as to bring an overall improvement in the health status of the mother and the infants. A target of extending the programme to 1,200 sub-district hospitals by the end of the Seventh Plan period has been set. So far, 950 Plan Period Centres at sub-divisional hospitals have been approved. Remaining ones are to be taken up in 1989-90. State governments have sanctioned the programme in 831 sub-divisional hospitals.

The Urban Revamping Scheme has been introduced with a view to providing improved service delivery out-reach system of primary health-care; family welfare and maternity services in urban areas. No new urban family welfare centres are to be set up but existing urban forces are to be reorganised and new health posts established as per the recommendations of the working group. So far, 936 health posts and 14 city family welfare bureaux have been reorganised. State governments have sanctioned operationalisation in 832 health posts and 10 city family welfare bureaux.

Sterilisation beds scheme provides immediate facilities for tubectomy operations in the hospitals where such cases could not be admitted due to lack of facilities. Under the scheme, beds are sanctioned to those medical institutions/ hospitals which are run by voluntary organisations on the basis of their performance during the previous year. Beds are sanctioned to the voluntary institutions on the recommendations of the state governments and regional directors of health and family welfare of the respective states. Maintenance grant of Rs 3,000 per bed per annum is paid to each institution subject to the condition that a minimum of 60 tubectomies per bed per annum are performed. A total of 3,426 sterilisation beds had been approved under state government institutions, local bodies and voluntary organisations as on 31 March 1988.

The Government has evolved a scheme for renovation/remodelling IUD rooms into an operation theatre at the rural family welfare centres attached to primary health centres for providing improved facilities for sterilisation and MTP services to the population in rural areas. In all, 1,617 primary health centres were approved as on 31 July 1988.

MOTIVATION AND EDUCATION

The family welfare programme in India depends on its voluntary acceptance by the people. To approach about 13.5 crore literate and illiterate couples in the reproductive age group, living in urban and remote rural areas, a broad-based mass education and motivation programme has been launched. The mass mailing unit of the Department of Family Welfare disseminates information in the form of printed material to various categories of opinion leaders through direct mail service. Out of the list of addresses, five lakh are currently operational. In addition to this, the unit publishes two regular monthly journals—*Centre Calling* in English and *Hamara Ghar* in Hindi, and two quarterly publications—*Jan Swasthya Rakshak* in Hindi and *EPI Bulletin* in English.

AREA PROJECT

The area development projects under the Family Welfare Programme are being continued since the Fifth Five Year Plan. The beginning was made in 1973 with the World Bank and SIDA assisted Indian population projects in Uttar Pradesh and Karnataka. During the Sixth Plan period, these projects were extended and presently they cover a total of 67 districts of 15 states.

The projects are based on a model plan prepared by the Ministry of Health and Family Welfare and are designed to increase and strengthen facilities for delivery of health and family welfare services in an integrated manner in accordance with the approach outlined in the Sixth Plan. While the strengthening of infrastructure will be achieved in the rest of the country by the end of this century, the project areas are to get the infrastructure and manpower in a period of five years. The ultimate objectives of the projects are to improve health and family welfare infrastructure in the area covered and to reduce maternal and child mortality and morbidity.

RESEARCH AND EVALUATION

Research activities continued in the field of demography and also communication action through 18 population research centres in various states. Bio-medical research in the field of reproductive biology and fertility control is being done in the Indian Council of Medical Research, Central Drug Research Institute, All India Institute of Medical Sciences and National Institute of Health and Family Welfare.

10 Welfare

WELFARE activities in the country find their inspiration in the Constitution which postulates the goal of welfare state. Accordingly, through the Directive Principles of State Policy, "the state shall strive to promote the welfare of the people by securing and protecting as effectively as it may, a social order in which justice-social, economic and political, shall inform all the institutions of the national life". Special care shall also be taken "to promote the educational and economic interests of the weaker sections of the people, and in particular of the scheduled castes and scheduled tribes and shall protect them from social injustice and all forms of exploitation". As regards minorities, the Constitution ensures "protection and promotion of these groups to develop according to their own genius".

Welfare is no more a matter of charity. Welfare programmes in the beginning, were directed to provide a few basic curative and rehabilitative services. Over the years, a developmental orientation in contrast to the curative and custodial approach was given to the welfare programmes. At present these are oriented towards providing preventive, developmental and rehabilitative services to the disabled, the aged, the addicts, the mal-adjusted, the scheduled castes and the scheduled tribes and other backward and weaker sections of the society.

Hitherto, welfare of the weaker sections was entrusted to a number of ministries/departments. With a view to providing an integrated thrust to development of these sections of the population, a new Ministry of Welfare was formed by pooling subjects relating to welfare of the aged, disabled, programmes of social defence, welfare of the scheduled castes, scheduled tribes, other backward classes, minorities and the work relating to wakf matters.

ADMINISTRATIVE SET-UP

The responsibility for implementation of welfare schemes is being shared between the Centre and the state governments. The Centre is responsible for formulating welfare policies and programmes besides coordinating, guiding and promoting the implementation of welfare services by the states. The responsibility at the Centre rests with the Ministry of Welfare.

The activities of the Ministry of Welfare are carried out through five bureaux *viz.*, handicapped welfare, social defence, administration and minorities, tribal development and scheduled castes and backward classes.

WELFARE OF THE DISABLED

The number of disabled people in the country has been estimated to be around 120 lakh by the National Sample Survey Organisation. The Ministry is implementing programmes for the early detection and treatment, education, training and rehabilitation of disabled persons, namely, visually impaired, speech and hearing handicapped, orthopaedically handicapped, mentally handicapped, spastics and leprosy cured persons.

Four national institutes, one for each category of the disabled, have been set up for education, training, vocational guidance, counselling, rehabilitation, research and training in various areas of disability. These institutions are the National Institute for the Visually Handicapped at Dehra Dun, the National Institute for the Hearing Handicapped at Bombay, the National Institute for the Orthopaedically Handicapped at Calcutta and the National Institute for Mentally Handicapped at Hyderabad. Besides, the National Institute for Rehabilitation, Training and Research at Olatpur (Cuttack), the Institute for the Physically Handicapped at New Delhi, the School for the Mentally Retarded Children at New Delhi and the Training Centre for the Adult Deaf at Hyderabad also assist in implementing the various programmes. The Artificial Limbs Manufacturing Corporation at Kanpur manufactures aids and appliances for the handicapped.

VISUALLY IMPAIRED

The National Institute for the Visually Handicapped is an apex organisation in the field of training, research, vocational guidance, counselling, rehabilitation and development of suitable services for the blind persons. This Institute is also designed to serve as a premier documentation and information centre in the field of visually handicapped. The Institute has a model school for the blind children, a school for the partially sighted children, a training centre for the adult blind, a workshop for the manufacture of braille appliances, a sheltered workshop and a Central Braille Press. The Institute is also organising training courses for the teachers of the visually handicapped at four regional centres, namely, Delhi, Madras, Bombay and Calcutta.

SPEECH AND HEARING HANDICAPPED

The Ali Yavar Jung National Institute for the Hearing Handicapped at Bombay was established in August 1982 with the objective of providing integrated services at the national level for the education, training and research for the hearing handicapped. The Institute runs training courses for the deaf at its headquarters in Bombay and also at its regional training centres at Calcutta, New Delhi, Hyderabad and Bhubaneshwar. Besides, the training centre for the adult deaf at Hyderabad under the Institute provides educational and vocational training to the partially deaf. A number of audio, visual and print materials have been developed for creation of awareness, early detection, prevention and training of parents.

MENTALLY HANDICAPPED

At a rough estimate, of the 68.5 crore population of the country (1981 census), two per cent are suffering from mental retardation, most of whom reside in rural areas of the country. There are 286 special schools and centres for the mentally retarded in the country, a maximum of 61 in Karnataka, followed by 51 in Maharashtra and 36 in Kerala.

The National Institute for Mentally Handicapped (NIMH), Secunderabad, is one of the premier organisations set up in 1984 by the Government of India to undertake research, training and rehabilitation of the mentally handicapped. With a view to arousing awareness of the masses on the stupendous problem of mental retardation, NIMH is engaged in development of material to cater to urban as well as rural audience, which aims at educating parents of the mentally handicapped and the community as a whole on this problem. This campaign includes prevention of mental retardation, early detection and training of mentally retarded persons. It also aims at creating positive attitude towards mental retardation, removal of misconceptions and highlights the need for referral services to organisations providing systematic training and education to the mentally retarded. To achieve these objectives, NIMH is engaged in producing literature as well as audio-visual material in Hindi, English and major languages of the country, suitable even for neo-literates as well as illiterates. The Institute runs a Bachelor's degree course in mental retardation at Secunderabad and training courses for special teachers of the mentally retarded at Bombay, Calcutta and New Delhi. It also runs a model school for mentally deficient children at New Delhi.

According to a survey undertaken in the country by the NIMH, there was a phenomenal growth of voluntary organisations working for the mentally retarded during the decade 1977-86, when 164 new institutions came up as against only 65 during the preceding decade, *i.e.*, 1967-76.

ORTHOPAEDICALLY HANDICAPPED

The National Institute for the Orthopaedically Handicapped, Calcutta, has been set up in 1982 with the objective of undertaking research and training of personnel for the rehabilitation of the orthopaedically handicapped persons. The other objectives of the Institute include rendering services to the orthopaedically handicapped, developing appropriate service modules, promoting and manufacturing orthoptic and prosthetic aids and appliances.

OTHER INSTITUTES

The Institute for the Physically Handicapped at New Delhi, besides running a special school and a workshop for orthopaedically handicapped, trains physiotherapists and occupational therapists. The National Insitute for Prosthetic and Orthoptic Training at Olatpur (Orissa) meets the growing demand of trained personnel in the field of prosthetics and orthoptics, physiotherapy and occupational therapy and renders comprehensive rehabilitation services to the orthopaedically handicapped.

SCHOLARSHIPS

Scholarships are awarded to the visually, speech and hearing and orthopaedically handicapped students for general education and for technical and professional training. About 24,000 scholarships were awarded to the disabled students during 1987-88. The scheme is being implemented through the state governments/ union territory administrations. During 1987-88, Rs 294.50 lakh have been provided to the state governments/union territories under this scheme.

SUPPLY OF AIDS AND APPLIANCES

Under the scheme of assistance for purchase and fitting of aids and appliances launched during the International Year of the Disabled, aids and appliances costing between Rs 25 and Rs 3,000 are provided free of cost to the persons whose income is up to Rs 1,200 per month and at half the cost to those whose monthly income is between Rs 1,200 and Rs 2,500. During 1987-88, grants-in-aid of Rs 301.98 lakh have been provided to 58 implementing agencies recognised for the purpose to cover about 39,000 beneficiaries.

ASSISTANCE TO VOLUNTARY ORGANISATIONS

Financial assistance up to 90 per cent of the total cost of the projects is being extended to voluntary organisations for providing welfare services for the disabled. About 175 implementing organisations were given grants-in-aid amounting to Rs 340.98 lakh during 1987-88.

REHABILITATION CENTRES

A scheme for setting up of district rehabilitation centres (DRC) on a pilot basis was launched by the Government in 1983-84. The scheme envisages comprehensive services for prevention and early detection of disabilities and economic rehabilitation of the disabled within the community. The scheme will predominantly benefit the rural disabled. Six DRCs., one each in Orissa, Maharashtra, West Bengal, Karnataka, Tamil Nadu and Uttar Pradesh, have so far been established. In order to have a wider base for experimenting different models of DRC, it has been decided to extend this scheme to Assam, Andhra Pradesh, Haryana, Madhya Pradesh and Rajasthan. Under this scheme, it is also proposed to establish a National Information and Documentation Centre on disabilities and a Rehabilitation Technology Centre for development of aids and appliances at Delhi.

The Government has set up a Science and Technology Project for the application of technology for the welfare and rehabilitation of the handicapped. The objectives of the project are to coordinate, fund and direct application of technology in development and utilisation of suitable and cost effective aids. Also, appliances and methods of education and skillful development, are to be improved which would lead to enhancement of opportunities for employment, easier living and mobility, communication, recreation and integration in society.

SPECIAL EMPLOYMENT EXCHANGES

The special employment exchanges and special cells in normal employment exchanges endeavour placement of the handicapped in gainful employment. During 1986, 5,322 handicapped persons were placed in jobs through the existing 22 special employment exchanges, 40 special cells in normal employment exchanges and other general employment exchanges spread all over the country.

PETROL SUBSIDY SCHEME

Fifty per cent of the cost of petrol/diesel purchased by the handicapped owners of motorised vehicles, subject to certain ceilings, is reimbursed to all handicapped persons whose income is less than Rs 2,500 per month. The scheme is being implemented by states/union territories with the Central government providing cent per cent assistance.

NATIONAL AWARDS

Every year, the President presents national awards to the outstanding employers of the handicapped and to the most efficient handicapped employees/self employed persons from Government and private sectors, local bodies, public sector undertakings, corporations and placement officers of the handicapped. The Award to the handicapped employees consists of a citation, a certificate, a medal and cash prize of Rs 1,000. The employers are given a citation and a shield and placement officers are given a citation, a shield and a certificate. The national Award for the best work done in the year for the disabled was instituted in 1983 as a state recognition of voluntary action for the cause of the disabled. The Award consists of a citation, a certificate and a cash prize of Rs 20,000 for an individual and Rs one lakh to an institution.

RESERVATION IN SERVICES

To encourage employment of handicapped, three per cent of Group C and D posts are reserved in Central services and public sector undertakings for the physically handicapped. Age concession up to 10 years and relaxation in medical standards is available for Central government services.

NATIONAL HANDICAPPED WELFARE FUND

Government has set up a National Handicapped Welfare Fund, with voluntary contributions from public sector, private sector and general public at large. The fund will be utilised to augment the existing voluntary services for the welfare of the handicapped.

SOCIAL DEFENCE

Problems of family and social disorganisation are manifest in the form of delinquency, juvenile vagrancy, drug addiction, alcoholism and crimes of various types, etc. In order to control these problems of personal and social deviance, programmes of social defence have been launched by the state governments mainly within the framework of specific legislations and allied measures.

DELINQUENCY CONTROL

The programmes for the prevention and control of juvenile delinquency centred around the implementation of the Children Acts in various states and union territories. The Children's Act, 1960 has since been replaced by the Juvenile Justice Act, 1986 which came into force from 2 October 1987 throughout the country except Jammu and Kashmir. The Act provides for the care, protection, treatment, development and rehabilitation of neglected or delinquent juveniles and for the adjudication of certain matters relating to, and disposition of, delinquent juveniles. As per the provisions of the Juvenile Justice Act, the emphasis is on not keeping a child in jail and on dealing with juveniles in an atmosphere different from the usual atmosphere of the courts. Each and every case is to be brought before the Juvenile Welfare Boards without any loss of time. The juvenile may be sent to juvenile home for the period, until he ceases to be a juvenile. During the pendency of any inquiry regarding the juvenile, the juvenile shall, unless he is kept with his parents or guardians, be sent to an observation home or a place of safety. The Board may also place the juvenile under the care of parents, guardians or a fit person.

For prevention and control of juvenile social mal-adjustment, the Ministry of Welfare is implementing a Centrally-sponsored scheme under which assistance is provided for setting up and up-gradation of observation homes, juvenile homes and special homes and for training activities. The expenditure is shared between the Central and state governments equally.

SERVICES FOR CHILDREN

Providing care and protection to abandoned, neglected and destitute children is another programme. The objective of the scheme for the welfare of children in need of care and protection is to provide welfare services to destitute children for rehabilitating them as normal citizens in the community. The programme includes ameliorative services of food, shelter, clothing, medical attention, education, pre-vocational and vocational training, etc. The scheme was started in 1974-75 and is being implemented as a Centrally-sponsored scheme since 1979-80 Under the scheme, financial assistance is provided to voluntary organisations for maintenance of children, purchase of utensils, voluntary training equipment, etc., and for construction of cottages for destitute children. Ninety per cent of the expenditure is shared by the Central and state governments equally, whereas 10 per cent of the share is to be borne by the voluntary organisations. The grants are disbursed to the voluntary organisations by the states which are responsible for monitoring of the scheme and initially recommending cases for bringing the voluntary organisations within the ambit of the scheme.

WELFARE OF PRISONERS

Welfare of prisoners constitutes an important area of social defence. The Ministry of Welfare has recently formulated a scheme for welfare of prisoners with the objective of providing counselling and guidance to the prisoners and setting up of rehabilitation homes for facilitating the reintegration of the offenders within the community. It is a Centrally-sponsored scheme, where the expenditure is borne equally by the state governments and the Central government. The objective of the scheme is to identify cases of institutionalised offenders who would need prolonged care, protection and assistance in the community, on their release. There is a provision under the scheme for giving financial assistance to states and union territories for setting up of rehabilitation homes, counselling and guidance centres and de-addiction centres. The expenditure for the purpose is shared between Central and state government. The voluntary organisation is to bear 10 per cent of the expenditure. In case of tribal areas, the respective share of Central government, state government and the voluntary organisation is in the ratio of 47½ : 47½ : 5.

PROBATION OF OFFENDERS

The services in this field are being progressively developed within the framework of the Probation of Offenders Act, 1958. The Act contains systematic provisions for probation in respect of various categories of offenders under specified circumstances. It lays down special stress on the use of probation in lieu of imprisonment for youthful offenders below the age of 21. The probation officers, as appointed under the Act, conduct social investigation of offenders for consideration by the courts. They also supervise cases as are placed under them. Side by side, voluntary organisations provide financial and other assistance to those released on probation.

BEGGARY PREVENTION

Apart from the provisions of the substantive law against kidnapping, abduction and maiming of children for the purposes of begging, 15 states and two union territories have implemented special laws against begging. Besides, municipal and police Acts also provide for measures against begging. Some state governments have taken steps for the provision of training and employment facilities for beggars.

PROHIBITION AND DRUG ABUSE

Article 47 of the Constitution enjoins that the State shall endeavour to bring about prohibition of the consumption, except for medicinal purposes, of intoxicating drinks and drugs which are injurious to health. The responsibility for fulfilling the Constitutional obligation in regard to prohibition rests largely with state governments. The Government has, however, been continously making efforts to educate the people about the ill effects of drinking through mass media and also encouraging voluntary organisations through grants for educative publicity. Till December 1988, 27 voluntary organisations were given grants-in-aid to the extent of Rs 1.13 crore for promoting the cause of prohibition. The Welfare Ministry has also produced two short films on prohibition. Prints of these films are being supplied to the Directorate of Field Publicity for screening these films all over India. Besides this, *Aao Haath Badhayen*, a 10-minute radio-sponsored programme, is being broadcast in Hindi on 11 channels of *Vividh Bharati* in the Hindi belt. Prohibition is one of the subjects being dealt with under this programme. Apart from the above, the Government of India has a scheme to compensate the state governments for the loss in excise revenue on introduction of prohibition.

In recent years, the problem of drug abuse has been engaging the attention of the Government. The Government has adopted an integrated approach involving identification, referral services, treatment, public awareness, education, rehabilitative aspects and training of functionaries, besides controlling supply of illicit trafficking. A number of ministries/departments are concerned with the various aspects of the problem of drug abuse. The Ministry of Welfare has been looking into the educational and social welfare aspects of drug addiction. A number of voluntary organisations have been assisted in setting up de-addiction centres for treatment of drug addicts and counselling centres for their follow-up and rehabilitation, holding of de-addiction camps and to undertake awareness building programmes. All the state governments/union territory administrations have also been requested to draw up their programmes and plans of action to combat this problem. The United Nations Fund for Drug Abuse Control (UNFDAC) has also committed an initial budget of two crore US dollars from its resources towards the specific projects and programmes to be jointly agreed upon by the UNFDAC and the Government of India, within the framework of the basic master plan.

An empowered committee has been constituted with a view to evolving a co-ordinated strategy for drug abuse control. Besides this, a Central Committee on Prohibition and Drug Abuse has been reconstituted. An ad-hoc cabinet sub-committee has also been constituted to review the steps taken by different ministries to combat drug abuse and to oversee and coordinate the working of different ministries in this regard.

NATIONAL INSTITUTE OF SOCIAL DEFENCE

The National Institute of Social Defence functions as the Central advisory body for the coordination, standardisation and development of social defence programmes in the country. To achieve these, the Institute undertakes research on social defence, compiles and analyses statistics on the subject, promotes training/orientation and helps draft model legislation and rules in the field of social defence. It also advises the Central, state governments and union territory administrations on various aspects of social defence development.

RESEARCH AND EVALUATION

Research and evaluation studies, seminars and workshops are being sponsored in the fields of social welfare, social policy and social development through a scheme of grants-in-aid for research and publications. Under the scheme, universities/research institutions/professional bodies are given grants to meet the cost of the research project according to the approved norms.

WELFARE OF SCHEDULED CASTES AND SCHEDULED TRIBES

The scheduled castes and the scheduled tribes have been specified by Presidential Orders issued under the provisions of Article 341 and 342 of the Constitution. According to the 1981 census, about 23.51 per cent of the country's population comprised the scheduled castes and the scheduled tribes. In addition, some state governments have also specified other categories of people known as "other backward classes" and denotified nomadic and semi-nomadic communities.

While the Constitution has prescribed certain protective measures and safeguards for these classes, the successive Five Year Plans have regarded their progress as a major objective of national policy.

CONSTITUTIONAL SAFEGUARDS

The Constitution prescribes protection and safeguards for the scheduled castes, the scheduled tribes and other weaker sections either specially or by way of insisting on their general rights as citizens with the object of promoting their educational and economic interests and of removing the social disabilities. The main safeguards are:

(i) the abolition of untouchability and the forbidding of its practice in any form (Article 17);
(ii) the promotion of their educational and economic interests and their protection from social injustice and all forms of exploitation (Article 46);
(iii) the throwing open by law of Hindu religious institutions of a public character to all classes and sections of Hindus (Article 25b);
(iv) the removal of any disability, liability, restriction or condition with regard to access to shops, public restaurants, hotels and places of public entertainment or the use of wells, tanks, bathing *ghats*, roads and places of public resort maintained wholly or partially out of state funds or dedicated to the use of the general public (Article 15 (2));
(v) the curtailment by law in the interest of any scheduled tribes of the general rights of all citizens to move freely, settle in and acquire property (Article 19 (5));
(vi) the forbidding or any denial of admission to educational institutions maintained by the State or receiving grant out of State funds (Article 29(2));

(vii) permitting the State to make reservation for the backward classes in public services in case of inadequate representations and requiring the State to consider the claims of the scheduled castes and the scheduled tribes in the making of appointments to public services (Article 16 and 335);
(viii) special representation in the Lok Sabha and the state Vidhan Sabha to scheduled castes and tribes till 25 January 1990 (Article 330,332 and 334);
(ix) the setting up of Tribal Advisory Councils and separate departments in the state and the appointment of a special officer at the Centre to promote their welfare and safeguard their interests (Article 164 and 338 and Fifth Schedule);
(x) special provision for the administration and control of scheduled and tribal areas (Article 244 and Fifth and Sixth Schedules), and
(xi) prohibition of traffic in human beings and forced labour (Article 23).

MACHINERY FOR SAFEGUARDS OF SCs AND STs

In pursuance of the decisions taken by the Cabinet, Government has decided to strengthen the office of the Special Officer under Article 338 of the Constitution by providing him with two very senior officers *i.e.*, equivalent to secretary to the Government of India, one to look after issues involving the scheduled castes and the other to take care of issues concerning the scheduled tribes. A disciplinary mechanism is also to be provided in the form of a Secretary to be positioned in the Cabinet Secretariat to take action against defaulting government personnel violating the safeguards provided under the Constitution.

The Commission for Scheduled Castes and Scheduled Tribes has been renamed as National Commission for Scheduled Castes and Scheduled Tribes and will function as an Advisory Body on broad issues of policies and levels of development of scheduled castes and scheduled tribes. With this objective in view, the National Commission may include experts in the field of social anthropology, social work and other related social sciences. The functions of the National Commission will be:

(a) to study the extent and ramifications of untouchability and social discrimination arising therefrom and the effectiveness of the present measures and to recommend further measures to be taken;
(b) to study socio-economic and other relevant circumstances leading to the commission of offence against persons belonging to scheduled castes and scheduled tribes and to recommend appropriate remedial measures to ensure prompt investigation of such offences;
(c) to take up studies on different aspects of development of scheduled castes and scheduled tribes with a view to ensuring integration of these groups with the mainstream of the society in all aspects. These would include studies in the field of socio-economic development, education, commerce, trade, art, literature, language, housing, communication, agriculture, forestry, horticulture, fisheries, rehabilitation, pollution and environment, and

(d) such other functions as may be entrusted to the National Commission for Scheduled Castes and Scheduled Tribes in evolving general policies relating to any aspect of development of the scheduled castes and scheduled tribes as may be thought proper by the Central government.

The National Commission shall consist of a chairman and not more than eleven other members. The terms and conditions of the chairman and the members of the National Commission shall be as determined by the Government in each case, provided that their term of office shall not normally exceed three years.

LEGISLATION AGAINST UNTOUCHABILITY

For enlarging the scope and making the penal provision more stringent, the Untouchability (Offences) Act, 1955 had been comprehensively amended by the Untouchability (Offences) Amendment and Miscellaneous Provision Act, 1976, which came into force from 19 November 1976. With this amendment, the name of the principal Act has been changed to Protection of Civil Rights Act, 1955. The Act provides for penalties for preventing a person, on the ground of untouchability, from enjoying the rights accruing out of abolition of untouchability. Enhanced penalties/punishments have been provided for subsequent offences.

Under the provision of Section 8 of the Representation of the People's Act, 1951, a person who is convicted of an offence under the Act is disqualified from contesting elections to Parliament and state legislatures for a period of six years commencing from the date of such conviction.

The PCR Act, 1955 is administered by the state governments. Under a provision of Section 15A (4) of the Act, the Government also places every year, before each House of Parliament, an annual report on the working of the provisions of Section 15A of the Act.

PROTECTION OF CIVIL RIGHTS

In pursuance of the provisions made under Section 15A(2) of the Protection of Civil Rights Act, 1955, Central assistance is given to the state governments and union territory administrations. Provisions for legal aid to the scheduled caste victims of PCR Act cases have been made by 20 states. Special cells/squads have been created by 19 states for initiating and exercising supervision over prosecution for contravention of the provisions of the PCR Act. Eighteen states have set up committees at various levels to make periodical review of the problems of untouchability and cases related to it and also to suggest various measures for the effective implementation of the PCR Act. Fifty two special courts/special mobile courts have been set up in untouchability/atrocity prone districts of Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Orissa Rajasthan and Tamil Nadu for expeditious disposal of such cases. Necessary guidelines and instructions are issued to states from time to time for effective implementation of the provisions of PCR Act. Matching Central assistance is provided to the states for implementation of the PCR Act. Liberation of scavengers by conversion of existing dry latrines has also been taken up under it. One hundred and sixteen towns in 16 states have so far been assisted under the scheme 'whole town approach' in selected towns with the conditions for providing alternative employment to the liberated scavengers.

REPRESENTATION IN LEGISLATURES

Under Articles 330 and 332 of the Constitution, seats are reserved for scheduled castes and scheduled tribes in the Lok Sabha and state legislative assemblies in proportion to their population. This concession, initially for a period of 10 years from the commencement of the Constitution, has been extended through amendments up to 25 January 1990. Parliamentary Acts provide for such reservation in the union territories having legislatures. There is no reservation of seats in Rajya Sabha and Vidhan Parishad. Table 10.1 gives details of their representation in the Lok Sabha and the Vidhan Sabha.

Following the introduction of Panchayati Raj, safeguards have been provided for proper representation of members of scheduled castes and scheduled tribes by reserving seats for them in the gram panchayats and other local bodies.

RESERVATION IN SERVICES

Article 335 of the Constitution provides that the claims of the members of scheduled castes and scheduled tribes shall be taken into consideration, consistent with the maintenance of efficiency of administration, in making appointment to posts and services, in connection with the affairs of the Union or the state. Article 16(4) permits reservations in favour of citizens of backward classes, who may not be adequately represented in services. In pursuance of these provisions, the Government has made reservations for scheduled castes and scheduled tribes in the services under their control.

For the scheduled castes, reservation is 15 per cent of the vacancies for which recruitment is made by open competition on all-India basis and 16-2/3 per cent of the vacancies to which recruitment is made on all-India basis otherwise than by open competition. For the scheduled tribes, the reservation is 7.5 per cent in both cases. Reservation in direct recruitment to Group C and D posts, which normally attract candidates from one locality or region, is fixed in proportion to the population of scheduled castes and tribes in the respective states and union territories.

Reservation is also made at 15 per cent of the vacancies for the scheduled castes and 7.5 per cent for the scheduled tribes in promotions on the result of the competitive examinations limited to departmental candidates in Group B, C and D and in promotion by selection in Group B, C and D and to the lowest rung of Group A in grades or services to which direct recruitment if any, does not exceed 66-2/3 per cent. Reservation has been provided for scheduled castes and scheduled tribes in promotion on the basis of seniority subject to fitness in

TABLE 10.1 RESERVATION OF SEATS IN LEGISLATURES

(As on 1 June 1988)

State/ Union Territory	LOK SABHA				Legislative Assembly			
	Total	General	SC	ST	Total	General	SC	ST
1. Andhra Pradesh	42	34	6	2	294	240	39	15
2. Arunachal Pradesh	2	2	—	—	30	30	—	—
3. Assam	14	11	1	2	126	102	8	16[1]
4. Bihar	54	41	8	5	324	248	48	28
5. Goa	2	2	—	—	28	27	1	—
6. Gujarat	26	20	2	4	182	143	13	26
7. Haryana	10	8	2	—	90	73	17	—
8. Himachal Pradesh	4	3	1	—	68	49	16	3
9. Jammu and Kashmir	6	6	—	—	76[2]	70	6	—
10. Karnataka	28	24	4	—	224	189	33	2
11. Kerala	20	18	2	—	140	126	13	1
12. Madhya Pradesh	40	25	6	9	320	201	44	75
13. Maharashtra	48	41	3	4	288	248	18	22
14. Manipur	2	1	—	1	60	40	1	19
15. Meghalaya	2	2	—	—	60	5	—	55
16. Mizoram	1	1	—	—	40	2	—	38
17. Nagaland	1	1	—	—	60	1	—	59
18. Orissa	21	13	3	5	147	91	22	34
19. Punjab	13	10	3	—	117	88	29	—
20. Rajasthan	25	18	4	3	200	143	33	24
21. Sikkim	1	1	—	—	32	18[3]	2	12
22. Tamil Nadu	39	32	7	—	234	189	42	3
23. Tripura	2	1	—	1	60	36	7	17
24. Uttar Pradesh	85	67	18	—	425	332	92	1
25. West Bengal	42	32	8	2	294	218	59	17
26. Andaman and Nicobar Islands	1	1	—	—	—	—	—	—
27. Chandigarh	1	1	—	—	—	—	—	—
28. Dadra and Nagar Haveli	1	—	—	1	—	—	—	—
29. Daman and Diu	1	1	—	—	—	—	—	—
30. Delhi	7	6	1	—	56[4]	47	9	—
31. Lakshadweep	1	—	—	1	—	—	—	—
32. Pondicherry	1	1	—	—	30	25	5	—
Total	543	424	79	40	4,005	2,981	557	467

1. Some seats are reserved for two autonomous districts-North Cachar Hills and Mikir Hills.
2. Excluding 24 seats in the territory held by Pakistan.
3. One seat reserved for Sangha.
4. Metropolitan Council.

Group A, B, C and D posts in grades or services to which direct recruitment if any, does not exceed 66-2/3 per cent.

In promotions, by selection within Group A to posts carrying a maximum salary of Rs 5,700 (revised scale 4500-5700) per month or less, the scheduled castes and tribes officers, who are senior enough to be in the zone of consideration for promotion and are within the number of vacancies for which the select list has to be drawn, are included in that list provided they are not considered unfit for promotion.

To facilitate their adequate representation, concessions such as: (i) relaxation of age limit, (ii) relaxation in the standards of suitability, (iii) selection, provided they are not found unfit for the posts, (iv) relaxation of the qualification regarding experience in the case of direct recruitment only, wherever necessary and (v) inclusion of scientific and technical posts up to the lowest grade of Group A required for research in the scheme of reservations, have been provided for. Simultaneously, with notification to employment exchanges or advertisements in newspapers, vacancies and reservations for scheduled castes and scheduled tribes in Group C and D (Class III and IV) posts are announced over the stations of All India Radio located in areas having a concentration of scheduled castes and scheduled tribes population, notified to the voluntary associations of scheduled castes and scheduled tribes enlisted for this purpose and to the Directors of SC/ST Welfare in the states and union territories. Vacancies filled through the Union Public Service Commission otherwise than through examination, are advertised on the first occasion as exclusively reserved for scheduled castes/tribes and are re-advertised if the first advertisement is infructuous. Dereservation of vacancies for direct recruitment in Group A,B,C, and D has since been banned. If insufficient number of suitable SC/ST candidates are not available against the share of vacancies reserved for them, the shortfall will not be filled up by general category candidates and such vacancies will be kept unfilled till SC/ST candidates become available. Reservation for scheduled castes and scheduled tribes (including vacancies carried forward) is subject to the ceiling of 50 per cent of the total number of vacancies. This scheme of reservations is also being followed by the public sector undertakings. The voluntary agencies, which are in receipt of substantial grant-in-aid from the Government, are also required, as a condition to adopt certain specific features of the reservation scheme in their establishments.

To give effect to the reservations, model rosters of 40 points each have been prescribed for direct recruitment by open competition on all-India basis and otherwise than open competition and promotions and 100 point roster for recruitment made on local and regional basis. If the vacancies in a service or cadre are too few for the purpose, all isolated posts are grouped together in direct recruitment. Annual statements are required to be submitted by the recruiting authorities for scrutiny by the Government. For ensuring implementation of the special representation orders, liaison officers have been appointed in different ministries of the Government.

State governments have also framed rules under the power given to them by item 41 of the State List of the Seventh Schedule to the Constitution for the reservation of posts for these classes and have taken steps to increase their representation in the state services. Reservation in state government services, however, is under the exclusive jurisdiction of the state governments.

The representation of scheduled castes and scheduled tribes in Central government services as on 1 January 1983 is given in table 10.2.

TABLE 10.2 SC/ST REPRESENTATION IN CENTRAL GOVERNMENT

Group (Class)	Number of Employees	Scheduled Castes	Percentage of Scheduled Castes to Total	Scheduled Tribes	Percentage of Scheduled Tribes to Total
A (Class I)	53,165	3,574	6.72	761	1.43
B (Class II)	62,600	6,368	10.17	922	1.47
C (Class III)	21,28,746	3,11,070	14.61	88,149	4.14
D (Class IV) (Excluding sweepers)	13,03,005	2,55,053	19.57	71,812	5.51
Total	35,47,516	5,76,065	16.24	1,61,644	4.56
ALL INDIA SERVICES					
IAS	4,236	404	9.54	181	4.27
IPS	2,198	330	10.40	77	3.50

ADMINISTRATION OF SCHEDULED/TRIBAL AREAS

Some areas have been scheduled in Andhra Pradesh, Bihar, Gujarat, Himachal Pradesh, Madhya Pradesh, Maharashtra, Orissa and Rajasthan under Article 244 and the Fifth Schedule to the Constitution. The Governors of the respective states submit a report annually to the President on the administration of the scheduled areas in their states.

The tribal areas in Assam, Meghalaya and Mizoram are administered subject to the provisions of the Sixth Schedule to the Constitution. Under the Schedule, they are divided into autonomous districts. There are eight such districts, namely, North Cachar Hills and Mikir Hills districts in Assam, United Khasi-Jaintia Hills, Jowai and Garo Hills districts in Meghalaya and Chakma, Lakher and Pawi districts in Mizoram. Each autonomous district has a district council consisting of not more than 30 members of whom not more than four can be nominated and the rest to be elected on the basis of adult suffrage. The councils are vested with certain administrative, legislative and judicial powers.

WELFARE AND ADVISORY AGENCIES

The Ministry of Welfare is the nodal ministry for overall policy, planning and co-ordination of programmes of development of scheduled castes and scheduled tribes. Each Central ministry and department is the nodal agency concerning its sector. The Ministry of Welfare maintains liaison with Central ministries and state governments.

A commission for scheduled castes and scheduled tribes consisting of a chairman and not exceeding four other members, including the Special Officer appointed under Article338 of the Constitution known as the Commissioner for Scheduled Castes and Scheduled Tribes, was set up in July 1978. The Commission is to investigate all matters relating to Constitutional safeguards, reservation in public services, to study the implementation of the Protection of Civil Rights Act, 1955, with particular reference to the objective of removal of untouchability and invidious discrimination arising therefrom, and to ascertain the socio-economic and other relevant circumstances responsible for the commission of offences against persons belonging to scheduled castes and tribes with a view to recommending appropriate remedial measures.

PARLIAMENTARY COMMITTEE

The Government had set up three Parliamentary Committees, the first in 1968, the second in 1971 and the third in 1973, to examine the implementation of the Constitutional safeguards for the welfare of scheduled castes and scheduled tribes. The Committee has since been constituted as a standing committee of Parliament, the tenure of the members being one year.

WELFARE DEPARTMENTS IN STATES

The, state governments and union territory administrations have separate departments to look after the welfare of scheduled castes and scheduled tribes and other backward classes. The administrative set-up varies from state to state. In Bihar, Madhya Pradesh and Orissa, separate ministers have been appointed to look after tribal welfare as prescribed in Article 164 of the Constitution. Some other states have set up committees of members of state legislatures on the pattern of the Parliamentary Committee at the Centre.

All the states having scheduled areas as also Tamil Nadu and West Bengal, have constituted Tribal Advisory Councils as per provision in the Fifth Schedule to the Constitution to advise on matters pertaining to the welfare and advancement of the scheduled tribes in the state.

VOLUNTARY ORGANISATIONS

A number of voluntary organisations also promote the welfare of scheduled castes and scheduled tribes. Important organisations of all India character are; Harijan Sevak Sangh, Delhi; Indian Red Cross Society, New Delhi; Hindu Sweepers Sevak Samaj, New Delhi; Ramakrishna Mission, Narendrapur;

Bharatiya Adimjati Sevak Sangh, New Delhi; Andhra Rashtra Adimjati Sevak Sangh, Nellore; Ramakrishna Missions, Cherrapunji, Ranchi, Puri, Silchar, Shillong and Purulia; and Bharatiya Samaj Unnati Mandal, Bilvandi in Maharashtra; Thakkar Bapa Ashram, Numakhandi, Orissa; Servants of India Society, Pune, Maharashtra and Social Work and Research Centre, Tilonia, Rajasthan. The Government also provides grants-in-aid to non-official voluntary organisations working among scheduled castes and scheduled tribes.

WELFARE SCHEMES

The welfare of scheduled castes and scheduled tribes is given special attention by both the Central and state governments. Special programmes for their welfare have been undertaken in the successive Five Year Plans and the size of investment on these special programmes has been increasing from Plan to Plan as shown in table 10.3

TABLE 10.3 EXPENDITURE DURING THE PLANS

(Rs crore)

	Period	Expenditure
First Plan	1951-56	30.04
Second Plan	1956-61	79.41
Third Plan	1961-66	100.40
Annual Plans	1966-69	68.50
Fourth Plan	1969-74	172.70
Fifth Plan	1974-78	296.19
Sixth Plan	1980-85	1,337.21

In addition, state governments have also been spending a sizeable amount from their non-plan budgets on the welfare of these classes.

CENTRALLY-SPONSORED SCHEMES

Some of the important Centrally-sponsored schemes are:

COACHING AND ALLIED SCHEME FOR SC/ST CANDIDATES

The objective of this scheme is to improve the representation of scheduled caste and scheduled tribe candidates in various posts/services in Central/state government/public undertakings by providing them pre-examination training for various competitive examinations like IAS, IPS and other Central and state service examinations, Bank competitions, LIC, GIC, NDA, CDS, etc. This is a two-tier scheme. The pre-examination training centres run by the state governments/union territories are financed by the Central and state governments on 50:50 basis. The centres run by the universities/institutions, etc., are financed by the Central government on 100 per cent basis. At present about 96 pre-examination training centres have been set up in various parts of the country.

POST-MATRIC SCHOLARSHIPS FOR SC/ST STUDENTS

The scheme of post-matric scholarships to scheduled castes and scheduled tribes was started in 1944-45 with the objective of providing financial assistance to the students studying at post-matriculation stages in different schools and colleges in the country, so as to enable them to complete their education. Beginning with a mere 114 awards to scheduled caste students in 1944-45 and 89 for scheduled tribe students in 1948-49, the number of awards to them had reached 9.74 lakh in 1985-86 and is espected to rise to 13 lakh for 1988-89. Keeping in view the rising cost of living and other factors, the rates for all courses and the income limits of parents/guardians/wards for eligibility of the scholarships have also been revised from 1 July 1981. From 1980-81, the employed students with a total income of Rs 750 per month are made eligible for the scholarships, restricted to reimbursement of compulsory non-refundable dues/fees, etc.

GIRLS HOSTEL SCHEME FOR SCHEDULED CASTES

Under this scheme Central assistance is provided to the state governments/union territories on 50: 50 matching basis for the construction of hostel buildings, with a view to providing hostel facilities to the scheduled caste girls studying in middle, high, higher secondary schools, colleges and universities.

RESEARCH AND TRAINING

The Government provides cent per cent financial assistance to reputed social science research agencies/institutions which have a proven expertise in studies on the economic development, problems and requirements of the scheduled castes and also on the impact of the implementation of various economic programmes undertaken by the governmental bodies. Studies which come out with practical recommendations and need immediate remedial action are considered for financial assistance under the scheme.

BOOK BANK SCHEME FOR SC/ST STUDENTS

The scheme is for scheduled caste and scheduled tribe students in medical/engineering degree courses to provide text-books to those who can ill-afford expensive education without State support. One set of text-books costing Rs 5,000 is meant for three students to share among them and its life period is fixed at three years.

SCHOLARSHIP FOR SC/ST STUDENTS

The Ministry of Welfare has been implementing the Government of India's National Overseas Scholarship and Passage Grants for students belonging to scheduled castes, scheduled tribes and other students. It is in operation since

1954-55. The objective of the scheme is to provide adequate financial assistance and facilities for meritorious students belonging to scheduled castes, scheduled tribes and a few other similarly situate socially and economically backward groups, who are citizens of India, who do not have means to go abroad for higher studies especially in respect of those subjects for which facilities are either not available in India or are inadequate within the country, namely, the subjects relating to science and technology.

The scholarships are provided for studies at post-graduate and Ph D/Post Doctoral research levels. No scholarship is now available for subjects and fields concerned with Indian studies, agriculture and allied subjects, veterinary science and medical sciences. During the Sixth Plan, the number of awards available for each year was 21. From 1985-86, 25 scholarships are available for each year.

According to the existing pattern of the scheme the value of the scholarships includes (a) maintenance allowance US $ 7,000 and US $6,000 per annum for Post Doctoral and Ph D studies, respectively; (b) contingency allowance (for purchase of books, study tours etc.) US $350/- p.a., and (c) equipment allowance of Rs 1,000 and journey allowance.

In addition to the above allowances, the scholars are also entitled to the cost of passage both ways, train fare, actual cost of admission, tution fees, examination and other compulsory fees and medical health insurance premium. All the expenditure on the scholars in connection with their studies/stay is borne by the Government of India.

PRE-MATRIC SCHOLARSHIPS

The scheme which began in 1977-78, is intended for the educational development of children of those who are engaged in the so-called unclean occupations, *viz.*, scavenging of dry latrines, tanning, flaying and sweeping, studying in classes VI to X. A scholarship of Rs 200 per month is given to each student studying in classes VI to VIII and Rs 250 per month to students studying in classes IX and X.

STRATEGY FOR DEVELOPMENT OF SCHEDULED CASTES

A three-pronged strategy has been evolved to speed up the development of scheduled castes: (a) special component plans of the Central ministries and state government, (b) special Central assistance to the special component plans for the scheduled castes of the states and (c) scheduled caste development corporations in the states.

The special component plans (SCP) envisage indentification of schemes under general sector of development which would be of benefit to the scheduled castes, quantification of funds from all divisible programmes under each sector and determination of specific targets as to the number of families which are to be benefitted from these programmes under each sector. The overall objective is to assist scheduled caste families to substantially improve their income. The provision of basic services and facilities and of access to opportunities for social and educational development are also to be brought into the special component plans.

During the Sixth Plan period, an amount of Rs 4,481.91 crore was earmarked for special component plan. This allocation was made out of the total plan outlay of Rs 46,831.30 crore.

The Central ministries/departments have also begun to formulate the special component plan for scheduled castes. So far only eight Central ministries/departments have formulated SCP.

SPECIAL CENTRAL ASSISTANCE

The Government provides special Central assistance (SCA) to the state special component plans for the scheduled castes. The special Central assistance is an additive to the state plan and programmes for scheduled castes and it does not follow the systematic pattern for special schemes. It is meant for the totality of the state efforts for the development of the scheduled castes. The additionality, according to the states, from the assistance is to be used by them only for income generating economic development schemes in conjunction with the outlays in their special component plans so as to assist the economic advancement of the maximum possible number of scheduled caste families living below the poverty line. The assistance is apportioned among the state governments and union territory administrations taking into account facts like the scheduled caste population, backwardness of the states and efforts of the state governments. The special Central assistance has helped in motivating the state governments to put in larger outlays in their special component plans as shown in table 10.4.

TABLE 10.4 CENTRAL ASSISTANCE

(Rs crore)

Year	State Plan Outlay	SCP Outlay	Percentage	Special Central assistance
1979-80	5,967.03	240.54	4.03	5
1980-81	7,140.31	547.84	7.67	100
1981-82	8,229.31	632.76	7.69	110
1982-83	9,445.49	675.76	7.15	120
1983-84	11,120.80	754.86	6.79	130
1984-85	12,504.38	24.15	7.39	140
1985-86	12,949.76	1,007.82	7.78	175
1986-87	--	1,186.02	6.76	175

SCHEDULED CASTE DEVELOPMENT CORPORATIONS

The scheduled caste development corporations in the states are envisaged to interface between scheduled caste families and financial institutions in respect of bankable schemes of economic development. The corporations provide margin money loan-assistance to these families, thereby helping to increase the flow of funds from financial institutions to scheduled caste families.

These corporations have been set up in 18 states and three union territories—Pondicherry, Delhi and Chandigarh. Grants are given by the Government to the state governments for investment in the share capital of the corporations in the ratio of 49:51. Table 10.5 shows the release made so far.

TABLE 10.5 GRANT FOR SCHEDULED CASTE DEVELOPMENT CORPORATIONS

(Rs lakh)

Year	State Government Contribution	Amount released by the Centre
1978-79	710.55	50.00
1979-80	703.16	1,224.00
1980-81	1,403.00	1,300.97
1981-82	1,367.56	1,332.87
1982-83	1,364.40	1,350.00
1983-84	1,759.93	1,400.00
1984-85	1,452.21	1,500.00
1985-86	1,755.81	1,500.00
1986-87	1,982.15	1,458.56
1987-88	1,488.52	1,300.00

Based on the experience gained by these corporations and suggestions received from the Central ministries/state governments, certain modifications were effected in the scheme during 1981-82. The corporations can now provide margin money loan-assistance for schemes with total non-recurring cost up to Rs 12,000 as against the earlier ceiling of Rs 6,000. The state governments are now eligible for grants-in-aid on a matching basis for promotional activities and for the staff of the corporation engaged in monitoring and evaluation, subject to a ceiling of certain percentage of the cumulative Central assistance.

Besides arranging for financial assistance for traditional occupations like agriculture, animal husbandry, household industry, etc., the scheduled caste development corporations also arrange for diversification of occupations such as financing of small shops, industries, auto-rickshaws and many other trades and professions. Some scheduled caste development corporations also arrange for irrigation facilities like digging wells and tubewells. Some of them also impart training to enable the concerned beneficiaries to take up more profitable occupations or to improve their existing skills.

A National Scheduled Caste and Scheduled Tribe Financial Corporation has been set up by the Government of India in order to enhance the credit flow to the SC, ST in all sectors including industry.

DEVELOPMENT OF SCHEDULED TRIBES

Tribal development has been based on a two-pronged approach, namely, (a) promotion of development activities to raise the level of living of the scheduled tribes and (b) protection of their interests through legal and administrative support.

The tribal sub-plans evolved for the Tribal Development Projects during the Fifth Plan, today cover 19 states/union territories covering 372 lakh tribal population. It is implemented through 184 integrated tribal development projects, 277 pockets of tribal concentration and 32 clusters having a total population of 5,000 or 50 per cent or more tribal concentration. The programmes for development of 73 primitive tribes have been taken up under these projects. The state governments have been requested to prepare fresh action plans/project reports for the ITDP, tribal pockets and the primitive tribal groups.

During 1988-89, a flow of about of Rs 1,500 crore from state/UT plans is envisaged for tribal sub-plans. Besides, provision has been made for special Central assistance of Rs 168.5 crore. Assistance under poverty alleviation programmes will be provided to 8.05 lakh scheduled tribe families during the year. The state governments have been requested to formulate special schemes for the tribals outside tribal sub-plan areas for implementation from the funds available from SCA. The emphasis is on providing a package of services to individual beneficiary families in such a manner so as to meet their specific needs, raise their level of living and give them income-generating schemes to enable them to improve the quality of life.

The tribal sub-plan is being implemented through financial resources drawn from (a) state plan; (b) special Central assistance by the Ministry of Welfare; (c) flow from Central ministries' programmes, and (d) institutional finance. As against an investment of about Rs 1,100 crore during the Fifth Plan period, the estimated investment for the Sixth Plan was of the order of Rs 5,535.50 crore and the likely investment for Seventh Plan will be of the order of Rs 10,500 crore. The special Central assistance outlay for these projects during the Seventh Plan has been fixed at Rs 756 crore as against Rs 485.50 crore during the Sixth Plan.

During the Seventh Plan, specific objectives set-forth under tribal sub-plan strategy are: (i) taking up family-oriented beneficiary programmes through raising productivity levels of the beneficiary families in the field of agriculture, horticulture, animal husbandry, small industries, etc; (ii) elimination of exploitation of tribals in the sphere of alienation of land, money-lending, debt bondage, forest, liquor vending, etc.; (iii) human resources development through education and training programmes; (iv) development of vulnerable tribal areas and groups like forest villagers, shifting cultivators, displaced and migrant tribals including tribal women, and (v) upgradation of environment of tribal areas.

The 20-Point Programme continues to focus greater attention on development of scheduled tribes. During the Sixth Plan period (1980-85) as against a target of assisting 27.60 lakh scheduled tribe families, 39.67 lakh families were economically assisted to enable them to cross the poverty line. For the Seventh Plan period (1985-90), 40 lakh scheduled tribe families below the poverty line are targetted to be provided economic assistance. In the first three years of the Seventh Plan period, *i.e.*, 1985-87, as against the target of assisting 24,76,000 scheduled tribe families, 31,00,000 scheduled tribe families were assisted.

TRIBAL RESEARCH INSTITUTES

Tribal research and training institutes have been functioning in Andhra Pradesh, Assam, Bihar, Gujarat, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Uttar Pradesh, Tamil Nadu and West Bengal. They play a useful role in the formulation of tribal sub-plan, project reports, monitoring and evaluation, research studies and training of personnel.

TRIFED

In the field of marketing of tribal produce, a major initiative has been taken in the setting up of a Tribal Cooperative Marketing Development Federation of India (TRIFED). The Federation through its operation would seek to eliminate exploitation of tribals by improving marketing of their produce. Concommitant with this, the Federation would strive for more efficient marketing and realisation of better prices by the tribals who are the primary collectors of minor forest produce. Higher realisation would also be effected through better processing and undertaking research in product development and product innovation. The Federation will also be available to the Government for extending price support operations in respect of tribal commodities whenever necessary.

ADVISORY BOARD ON SC/ST WOMEN AND CHILDREN

To provide broad guidelines on policy formulation relating to the development of ST and ST women and children, an Advisory Board, under the chairpersonship of the Minister of State for Welfare, women and social workers and representatives of state government as members, is functioning since 29 August 1986.

WELFARE OF MINORITIES

To uphold the ethos of the Indian Constitution and to maintain its distinctive character of having a secular and egalitarian society, provisions were made to safeguard the interests of minorities whether based on religion or language. In order to maintain a constant vigil and review the implementation of constitutional safeguard to different groups of minorities, besides appointing special officers, a number of commissions have been constituted.

Minorities Commission is one such body appointed in 1978. The Commission has a chairman and other members, belonging to different minority communities. Among the functions entrusted to the Commission are evaluation of the working of the various safeguards provided in the Constitution; making of recommendations to ensure effective implementation of the safeguards; reviewing of implementation of the policies pursued by the Union and state governments; looking into specific complaints regarding deprivation of rights and safeguards; making surveys and research; suggesting appropriate legal and welfare measures in respect of any minority and submission of periodical reports to the Government.

There is also a Commissioner for Linguistic Minorities who investigates all matters relating to the safeguards provided for linguistic minorities. He also looks into the representations and complaints received from various associations and individuals belonging to the linguistic minorities for redressal of their grievances.

The Union Government established a special cell, called the Minorities Cell, in 1983 in accordance with a 15-point programme enunciated by the Prime Minister. This programme is administered by the Central government and is implemented through the state governments and union territory administrations with the help of machinery operated by the nodal officers appointed for the welfare of minorities. The Minorities Cell of the Union Government ensures fuller participation of minorities in all aspects of national life, for coordinating and monitoring the implementation of the 15-point programme and for expeditious action of minority grievances. Some of the states and union territories have also set up minority cells. The monitoring of the programme is regularly carried out by the Union Government through the state governments and union territory administrations. The 15-point programme broadly aims at prevention of communal violence and promotion of communal harmony; laying special emphasis on the educational needs of the minorities; according special consideration to the minorities in the matter of recruitment to services, especially in state and Central police force, and ensuring fair and adequate share to the minorities in the benefits flowing from various development programmes.

BACKWARD CLASSES COMMISSION REPORT

The report of the Second Backward Classes Commission, headed by Shri BP Mandal, which was submitted to the Government on 31 December 1980, is under consideration.

WAKFS

Wakfs are permanently dedicated movable or immovable properties for any religious, pious or charitable purpose recognised by Muslim Law. Wakfs are in fact instruments of social good. Better management of these institutions and fuller realisation of their objectives contribute to the development and progress of the society.

THE WAKF ACT, 1954

The administration of the Central legislation for Wakfs, *i.e.*, the Wakf Act, 1954, is the responsibility of the Ministry of Welfare. This Act, however, does not extend to the states of Jammu and Kashmir and Sikkim. It is not in force in the states of Uttar Pradesh and West Bengal who have their own Wakf laws. Parts of the states of Gujarat and Maharashtra are also not governed by the Central Act.

The Wakf Act, 1954 envisages a decentralised set-up. While the *Mutawallia* (Manager) of each individual Wakf retains his autonomy in the discharge of his responsibilities, the general superintendence of all the Wakfs in a state vests in the Wakf Board, set up by each state government, which has to ensure that the Wakfs are properly maintained and administered and that their income is duly applied to the objects for which such Wakfs were created. The Board has its own office and staff and its own funds composed of a statutory contribution realised from different Wakfs.

The overall supervision of the Wakf Board vests in the state government which, apart from appointing members of the Board and its secretary, also receives the annual budget of the Board and appoints auditors for auditing its accounts. It also has powers to issue directions to the Board and in certain cases supercede it. The Central government has powers to issue directions to a Board on matters of policy. The Central government is advised on matters relating to administration of Wakfs by a statutory body known as the Central Wakf Council which is headed by the Union Minister incharge of the subject of Wakf.

In order to further strengthen the administration of Wakfs in the country, an amending legislation known as the Wakf (Amendment) Act, 1984 has been passed. Two provisions of the amended Act have already been enforced and the question of enforcement of the other provisions is under active consideration of the Central government.

With a view to augmenting the financial resources of individual Wakfs/Wakf Boards, the Central government gives an annual grant-in-aid to the Central Wakf Council for extending loan assistance for development of urban Wakf properties. So far 55 developmental projects have derived benefit from this scheme, out of which 13 have already been completed. The provision for the grant-in-aid during 1988-89 is Rs 60 lakh. The Central government also assists the Wakf Boards, through the agency of the state governments, in solving the problems of common concern.

DURGAH KHWAJA SAHEB, AJMER

The internationally famous Wakf, namely, the Durgah of Hazrat Khwaja Moinuddin Chishti at Ajmer is governed by the Durgah Khawaja Saheb Act, 1955. This endowment is managed by a Centrally appointed committee which is assisted by an officer known as *Nazim*. The committee has its own funds, and, among other things, looks after the welfare of devotees visiting the Durgah. It runs two dispensaries and has constructed six multi-storeyed guest-houses to provide accommodation at economical rates.

WOMEN AND CHILD DEVELOPMENT

All round development of women and children constitutes an important component of human resources development. Hence, these two target groups are given special treatment in addition to the benefits they derive from the general developmental programmes in the country. In order to revitalise the existing developmental programmes for women and children, a separate Department of Women and Child Development was set up under the newly created Ministry of Human Resource Development in September 1985. The responsibility of implementing welfare and developmental programmes for women and children is shared between the Centre and the state governments. The Centre is responsible for formulating welfare policies and programmes besides coordinating, guiding and promoting implementation of various programmes by the Central ministries/departments, the state governments and the voluntary sector.

The Department of Women and Child Development is the nodal agency to guide, coordinate and review the efforts in this area, both governmental and non-governmental. The major thrust of the programmes of the Department is to ensure a state of well-being for women and children, particularly those of the weaker sections of the society through integrated programmes.

The Department has two bureaux: (i) Nutrition and Child Development and (ii) Women's Welfare and Development. The Planning, Research and Statistics Division provides technical support to the activities of the Department. The Central Social Welfare Board and the National Institute of Public Cooperation and Child Development assist the Department in its functions. Besides, the voluntary sector renders great help in carrying out the task.

The Bureau of Nutrition and Child Development is responsible for overall policy and coordination of child development, besides implementing programmes for the welfare and development of children. The Women's Welfare and Development Bureau is entrusted with the responsibility of coordinating women's welfare and developmental programmes in the country besides implementing a few programmes for the welfare and economic development of women.

FINANCIAL INVESTMENT

Investment in the development of women and children has increased from Rs 117.90 crore in the Sixth Plan (1980-85) to Rs 740.62 crore in the Seventh Plan (1985-90). The amount spent in the first two years of the Seventh Plan (1985-86) and (1986-87) is Rs 241.84 crore. In 1987-88 an expenditure of Rs 223.20 crore had been incurred. During 1988-89 expenditure of the Department is expected to reach Rs 235.00 crore.

DEVELOPMENT OF CHILDREN

Highest priority is given to child development programmes in the country. The

National Policy for Children adopted by the Government in August 1974, describes the country's children as a 'supremely important asset'. It enjoins the State with the responsibility for their nurture and solicitude. There is a National Children's Board to provide a focus and to ensure continuous planning, review and coordination of all essential services for children. Similar boards have also been constituted in all states/union territories under the presidentship of Chief Minister/Lt Governor/Administrator.

INTEGRATED CHILD DEVELOPMENT SERVICES

The programme of Integrated Child Development Services (ICDS) is the basic support to human resources development, as the same was specially designed for children up to six years and expectant and nursing mothers. It provides a package of early childhood services, namely, supplementary nutrition, immunisation, health check-up, referral services, nutrition and health education and non-formal pre-school education. Till the end of the Sixth Plan 1,019 Centrally-sponsored ICDS projects had been sanctioned. During 1985-86, 211 projects, during 1986-87, 250 and during 1987-88, 40 projects had been sanctioned. In addition 218 projects had been taken up in the state sector. Thus, so far, 1,738 (1520 Central sector+218 state sector) ICDS projects have been sanctioned all over the country. These projects are taken up in selected blocks in the most backward rural/tribal areas and urban slums. As per reports for March 1988, these projects are providing supplementary nutrition to 103.83 lakh beneficiaries (87.14 lakh children and 16.69 lakh women) and pre-school education to 47.69 lakh children of 3-6 years.

CRECHES FOR CHILDREN

Children in age group 0-5 years, of working and ailing mothers are provided with services like sleeping facilities, day-care, supplementary nutrition, medicines, recreation and weekly health check-up. Voluntary organisations, through which the scheme was implemented, made a modest beginning with 247 creches to cover about 5,000 children in 1974-75. It gained momentum in subsequent years. At present there are about 10,200 creches to benefit 2,55,600 children. Besides, institutional and faster care services are made available to about 3,000 additional children in need of care and protection.

EARLY CHILDHOOD EDUCATION

Great significance is attached to the pre-school years for the optimum development of the child. Hence, a Central scheme of Early Childhood Education is being given due propagation. Voluntary agencies are given financial assistance to run Early Childhood Education Centres for children in the age group 3-6.

Early Childhood Education Centres under the scheme are run either as adjuncts of primary/middle schools which are established by Government/local body or private managements or as independent units, particularly for the disadvantaged section in rural/tribal/backward areas in the nine educationally backward states of Andhra Pradesh, Assam, Bihar, Jammu and Kashmir, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal. To avoid any duplication of efforts, care is taken that ECE Centres are run in areas not covered by the Integrated Child Development Services Scheme. During 1987-88, 3,465 centres were assisted with Rs 224.65 lakh benefitting about 1,30,950 children.

NUTRITION PROGRAMMES

The Special Nutrition Programme (SNP) launched in 1970-71 provides supplementary nutrition to children below six years of age, expectant and nursing mothers in urban slums, tribal areas and backward rural areas. The programme mainly caters to the ICDS beneficiaries. At present, about 110 lakh beneficiaries all over the country are being covered under the programme. The SNP is implemented partly with the food supplied by CARE (Cooperative for American Relief to Everywhere) and WFP (World Food Programme) and partly with indigenous food.

A new programme under Centrally-sponsored scheme of wheat-based supplementary nutrition for pre-school children and nursing and expectant mothers, has been introduced from 1 January 1986. The objectives, target groups, supportive services of health, etc., of the programme follow the norms of SNP mentioned earlier. The programme is meant to expand the existing feeding services by covering additional beneficiaries, primarily in tribal areas, urban slums and backward rural areas. The programme has two components: Central assistance for additional beneficiaries, including free wheat and supportive costs for other ingredients, cooking, etc, and subsidy to states for wheat used in state-nutrition programmes.

Another nutrition programme is run through *balawadis* (day-care centres) by voluntary organisations. Under this programme, about 2.29 lakh children in the age group 3-5 years are covered through about 5,000 balawadis which are run by five voluntary organisations, *viz.*, Central Social Welfare Board, Indian Council for Child Welfare, Harijan Sevak Sangh, Bharatiya Adimjati Sevak Sangh and Kasturba Gandhi National Memorial Trust. In all, the supplementary nutrition programmes, health inputs and safe drinking water facilities are being progressively extended to maximise the impact.

NATIONAL AWARDS

The National Awards for Child Welfare were instituted in 1979, during the International Year of the Child, as an annual State recognition of voluntary action for the cause of the child. The Awards are meant for outstanding work done in the field of child welfare, both by individuals as well as organisations. During 1986, the scheme had been revised to offer five Awards to institutions and three to individuals. The Award for institutions constitutes a cash prize of Rs 2 lakh and a citation and for individuals a cash prize of Rs 30,000 and a citation.

NATIONAL CHILDREN'S FUND

A National Children's Fund was constituted under the Charitable Endowment Act, 1890, in 1979—International Year of the Child. The object of the Fund is to create a source of assistance to the voluntary organisations for innovative programmes of child development.

UNITED NATIONS CHILDREN'S FUND

India has been associated with UNICEF since 1949. UNICEF provides financial as well as technical assistance to India for programmes related to child welfare. India has progressively increased her contribution to UNICEF's general resources. It now stands at Rs 280 lakh. Since 1950, India has been a member of the UNICEF Executive Board. except for two years-once in 1961 and later from August 1977 to July 1978.

NATIONAL INSTITUTE OF PUBLIC COOPERATION AND CHILD DEVELOPMENT

The National Institute of Public Cooperation and Child Development (NIPCCD), New Delhi undertakes research, evaluation and training in the field of voluntary action and child development. Its programmes cover research on a wide range of problems and training of ICDS functionaries as well as senior personnel in social administration. The Institute has three field units, one each at Guwahati, Bangalore and Lucknow. It has sponsored 22 innovative research projects in respect of women and the creche programme.

TRAINING PROGRAMMES

In order to make adequate number of trained personnel available to man the various welfare-cum-developmental programmes, a number of training programmes have been sponsored by the Department of Women and Child Development in collaboration with various academic/research/training institutions in the country. Training of ICDS functionaries is carried on at over 295 *anganwadi* workers' training centres spread all over the country. Besides, there are about 21 training centres which impart training to middle level ICDS functionaries. At national level, NIPCCD, an apex organisation, provides training to various senior level officers. The All India Institute of Medical Sciences provides orientation and training facilities for the medical and para-medical staff of ICDS projects through selected medical colleges.

WELFARE OF WOMEN

The National Plan of Action for Women introduced in 1976 provides guidelines in formulating policies and programmes for the welfare and development of women in the country. The Women's Bureau in the Department is the national machinery for coordinating the implementation of policies and programmes. Considering the fact that upliftment of economic status has its impact on the general status of women, various economy-generating programmes for them are being given further fillip.

HOSTELS FOR WORKING WOMEN

To provide cheap and safe accommodation for working women belonging to low income groups, a scheme for construction/expansion of hostel buildings was started in 1972 with the help of voluntary organisations. The scheme was modified in 1982-83 to cover assistance for separate hostels for working women with children up to eight years of age. The scheme also provides assistance for purchase of buildings for the purpose of working girl's hostels. Working women drawing emoluments up to Rs 2,000 per month (consolidated) are eligible for accommodation in hostels assisted by the Government. Financial assistance under the scheme is given to registered voluntary organisations working in the field of women's welfare on cost sharing basis, the Government providing 75 per cent of the total estimated cost of construction. Since the inception of the scheme in 1972-73, 465 hostels have been sanctioned to provide accommodation to 29,537 working women.

TRAINING CENTRES FOR REHABILITATION OF WOMEN IN DISTRESS

With the object of training destitute women in the age group 18-50 years in marketable skills, a scheme for setting up rehabilitation centres began in 1977. The training is provided on residential and non-residential basis as per requirement. The scheme envisages training in both traditional and non-traditional trades for a period of not more than one year. The scheme is implemented through voluntary organisations which are given 90 per cent assistance for the purpose, shared equally by Central and state governments. In the case of union territories, 90 per cent assistance is released by the Centre. Trusts and charities, rural development agencies, panchayats and other local bodies are also eligible to get assistance under this programme. Since the inception of the scheme, 571 training courses to impart training to 20,139 women had been sanctioned up to 31 March 1988.

EMPLOYMENT AND INCOME-GENERATING PRODUCTION UNITS

This programme was started in 1982-83 for setting up projects aimed at income generation and employment on a sustained basis to needy women. This programme is implemented with the assistance of Norwegian Agency for International Development (NORAD). Assistance is given to public sector undertakings and autonomous organisations for the training component of their projects. Beneficiaries include rural poor women, women from weaker sections belonging to scheduled castes, scheduled tribes, war-widows and widows of employees of the implementing organisations.

SUPPORT TO TRAINING AND EMPLOYMENT PROGRAMME FOR WOMEN

A new omnibus scheme for rendering support to women's employment in various sectors such as agriculture, dairying, small animal husbandry, fisheries, khadi and village industries, handlooms, handicrafts and sericulture, where women are preponderantly engaged in work, has been formulated. In order to implement this programme, certain broad guidelines and parameters have been drawn up by the Department under which proposals from various interested agencies could be considered.

WOMEN'S DEVELOPMENT CORPORATIONS

A new scheme for setting up of women's development corporations in all the states had been formulated during 1986-87. The objective of the scheme is to provide better employment avenues for women so that they can become economically independent and self-reliant. Further, the scheme will help overcome major obstacles of women's employment especially in the self-employment sector. In fact, the women's development corporations are expected to work as catalytic agents to create sustained income-generating activities for women. These corporations would promote schemes for women and women's groups of the weaker sections of the society with priority to single women.

The functions of the corporations will be to identify women entrepreneurs; prepare a shelf of viable projects and provide technical consultancy services; facilitate the availability of credit through banks and other financial institutions (through the scheme of marginal money assistance); promote marketing; promote and strengthen women's cooperatives and other organisations and to arrange training of beneficiaries in concerned trades, project formulation, financial management, etc., through existing institutions such as women's polytechnics and ITIs. Since the inception of the scheme, such corporations have been established in Kerala, Maharashtra, Punjab, Tamil Nadu, Karnataka, Andhra Pradesh, Uttar Pradesh, Gujarat and Union Territory of Chandigarh.

SOCIO-ECONOMIC PROGRAMME FOR WOMEN

Voluntary organisations are given financial assistance to take up a wide variety of income-generating activities and provide opportunities of 'Work and Wage' to needy and disabled women. The programme provides for setting up of small industrial units, handloom and handicraft units, etc., where groups of women and disabled persons are provided with opportunities for full-time or part-time work to help in supplementing their family income. Under this programme, dairy units and other animal husbandry programmes like piggery, goat-rearing, sheep-breeding, poultry units are also taken up. Assistance is given for starting self-employment units. The Central Social Welfare Board till 1988, released grants for organising 8,273 units for providing employment to about 1,05,108 beneficiaries.

CONDENSED COURSES OF EDUCATION FOR ADULT WOMEN

To create a band of competent trained workers such as primary school teachers, *balasevikas*, nurses, health visitors, midwives and family planning workers, particularly in rural areas and also to open new vistas of employment to needy women, the scheme of condensed courses of education was launched in 1958 by the Central Social Welfare Board. The component of vocational training was added to this scheme in 1975 to enable the women in the age group 18-30 to get specialised training in vocations so that they could augment their income. Since the inception of the scheme, about 12,186 courses benefitting 2,67,382 women, were sanctioned till March 1988.

VOLUNTARY ACTION BUREAU

The Central Social Welfare Board has set up Voluntary Action Bureau (VAB) at the Central level and in 29 states/union territories to combat atrocities against women and children and to provide preventive and rehabilitative services to the victims of atrocities and exploitation and also to create awareness about prevailing laws pertaining to women and children. The Board extends financial assistance to voluntary organisations for setting up family counselling centres to provide counselling and guidance to the needy women. Up to March 1988, 70 family counselling centres had been set up in different states.

The objectives of the VAB/family counselling centres are: (i) to educate and mobilise public opinion against social crime against women; (ii) to give counselling services to those having marital mal-adjustments and family disputes and to provide referral services like short-stay, vocational guidance, police assistance and free legal aid, and (iii) to create awareness about prevailing laws pertaining to women and children.

EDUCATION WORK FOR PREVENTION OF ATROCITIES ON WOMEN

A scheme of 'Education Work for Prevention of Atrocities on Women' is implemented through voluntary organisations with cent per cent Central assistance. It envisages holding of training camps for social and other workers, including Government functionaries; legal literacy training camps/para-legal training for women/*lok adalats*/preparation of legal literacy hand-books, guides, primers, etc., and use of traditional media for raising awareness relating to violence against women.

SHORT-STAY FOR WOMEN AND GIRLS

The Government is giving grants-in-aid to voluntary organisations for establishing and running short-stay homes. The idea behind the scheme is to protect and rehabilitate those women and girls who are facing social and moral danger due to family problems, mental strain, social ostracism and exploitation of any cause which may leave a woman in a situation where she is exposed to any kind of danger. Under the scheme, the following services/facilities are provided: (i) medical care; (ii) psychiatric treatment; (iii) case-work services; (iv) occupational therapy; (v) social facilites of adjustments, and (vi) educational, vocational and recreational activities. At present, 46 'homes' are running with grants-in-aid from the Government. According to the scheme, each 'home' should have an average of 30 residents at a time, with facilities for a minimum of 20 and a maximum of 40 residents.

OTHER PROGRAMMES

There are a number of other programmes for women being operated by the Central Social Welfare Board. Important among these are assistance to local village level women's organisation (*mahila mandal*), vocational training centres, rehabilitation centres, homes for destitute women, women's development centres in colleges, training of rural women in public cooperation, hostels for working women, publicity programmes, etc. Some states have begun women's development corporations to promote and assist economic activities for women. A number of voluntary organisations are actively engaged in mobilising public opinion and support to eradicate evil practices like early marriage, dowry system, withdrawing girls from schools, etc.

WELFARE SERVICES FOR THE AGED

The number of the aged, *i.e.*, those who are 60 years and above, is on the increase. They at present number 4.75 crore constituting 6.3 per cent of the population. Emotional, social, physical and other needs of most of them are being met within their family set-up. Some of them, however, lack family support due to changes in social institutions, traditions, mobility of offsprings away from them and scarcity of financial means.

Those who have retired from organised sectors are provided social security by the employers by way of pensions, provident fund, gratuity, etc. Such persons may need 'day-care centres' and other welfare services to supplement the care and services of the family. In case of families confronted with social problems, some may have to be accommodated in places where their emotional and entertainment needs could be met. The other major group of the aged is of those who retire from unorganised sectors without any social security benefit. They have to be provided financial assistance and in case they have no family, they have to be accommodated in places where they are provided free boarding and lodging.

There are a few State-run homes in the country. Most of the states and the Central government are providing assistance to voluntary organisations to set up homes for the aged. The Central government has started a scheme of grants-in-aid to voluntary organisations since 1983-84. Such assistance is available for providing day care and other services and for construction of homes for the aged. All state governments and union territories have their schemes of old age pensions. The criterion of eligibility differs, but generally, destitute, poor and infirm, aged of 60 and above are provided pensions at rates ranging from Rs 30 to Rs 100 per month. The number of beneficiaries of these schemes in the country is about 54 lakh.

LEGISLATIVE MEASURES

In pursuance of the recommendations of the Committee on the Status of Women in India, the Government accepted the principle of divorce by mutual consent and the Hindu Marriage Law was amended to that effect. Cruelty and desertion were added as grounds for divorce. Taking and giving of dowry were declared punishable for one and all and also a violation of Government servant's conduct rules for Central government employees. States were also advised to follow this course of action.

The Equal Remuneration Act, 1979 provides for equal remuneration to men and women workers and prevention of discrimination against women in the matter of employment. The Hindu Marriage Act, 1955 and Special Marriage Act, 1954 were amended by the Marriage Laws Amendment Act, 1976 to provide the right for a girl to repudiate before attaining maturity, her marriage as a child whether the marriage has been consummated or not.

The Child Marriage Restraint (Amendment) Act, 1978 raised the age of marriage for girls from 15 to 18 and for boys from 18 to 21. The offences under the Act have been made cognizable. The Factories (Amendment) Act, 1976 provides for establishment of creches where 30 or more women are employed (including casual labour or contract labour) as against one for every 50 previously. The Maternity Benefits Act, 1961 was amended in April 1976 to cover women, who do not fall within the purview of the Employees' State Insurance Act, 1948. The criminal law amendment bills were passed by the Parliament in 1983, which amended the Indian Penal Code, Indian Evidence Act and the Criminal Procedure Code to make offences of rape and such other crimes against women much more stringent and effective and also to make a new provision in the Indian Penal Code to make cruelty against women by the husband and other relations punishable.

SUPPRESSION OF IMMORAL TRAFFIC

The Constitution prohibits traffic in human beings. The Suppression of Immoral Traffic in Women and Girls Act, 1956 bans prostitution in its commercialised form as an organised means of living and inhibits prostitution in notified areas. The Act was amended for the second time in 1986 (the first being in 1978) to rectify the existing inadequacies and to make the provisions more stringent so that the problem of immoral traffic in human beings could be dealt with effectively in all its dimensions. The amended Act now retitled as Immoral Traffic (Prevention) Act, 1986 covers all persons, whether male or female, who are exploited sexually for commercial purposes. It makes punishment for the offences involving children and minors more stringent by enhancing the period of imprisonment. Under the Act, persons rescued from brothels are sent to protective homes or corrective institutions established for their care, treatment and rehabilitation. The Act empowers the state governments to make rules for its proper implementation. The Act empowers the Central government to set up rehabilitation of displaced persons from Pakistan (including those who migrated from former East Pakistan, now Bangladesh); Indian nationals repatriated from Sri Lanka and Tibetan refugees. The schemes are implemented directly by the Ministry of Home Affairs as well as through state governments and union territory administrations. Rehabilitation has more or less been completed except of Sri Lankan repatriates and Tibetan refugees.

REHABILITATION SCHEMES/PROGRAMMES

MIGRANTS FROM FORMER EAST PAKISTAN

About 41.47 lakh displaced persons from former East Pakistan, now Bangladesh migrated to India from 1947 to 31 March 1958. Out of these, over 31 lakh persons stayed on in West Bengal. A wide range of rehabilitation measures were undertaken for the resettlement of these people during 1948-1961. These included agricultural schemes, vocational, technical training schemes, rehabilitation loans for small traders, businessmen/professional people and provision of housing, medical and educational facilities.

NEW MIGRANTS

The on-going schemes for resettlement of old migrants in West Bengal relate to (a) acquisition of land in 175 post-1950 squatters' colonies, (b) housing loans to remaining 1,336 ex-camp site families and (c) resettlement of 676 families from Indian enclaves in former East Pakistan (now Bangladesh). One hundred and seventy five squatters' colonies were approved in 1978 and land has been acquired for 159 colonies. For the remaining colonies, the process of land acquisition is going on. Another 607 colonies have been approved recently. The state government has assured that the work, including grant of title to land, would be completed in five years. Of the 1,336 ex-camp site families at the beginning of the Seventh Plan, about 435 families were given housing loans in 1985-86, 1986-87 and 1987-88.

Migration of displaced persons from Bangladesh continued in waves from time to time till 25 March 1971. About 11.14 lakh persons who migrated between 1 January 1964 and 25 March 1971 are known as "New Migrants". Considering that West Bengal could not absorb any more migrants, it was decided by the Government of India to resettle such of those migrants who joined the camps set up outside West Bengal. Of the 78,000 families of new migrants who joined camps, about 75,425 families have been settled in various states including the Dandakaranya Project.

On the emergence of Bangladesh, about 15,800 families of new migrants left the camps and rehabilitation sites in India. Many of these families, however, later returned. After verification of their previous stay in camps/rehabilitation camps, 5,035 such families were readmitted to relief camps and have again been provided rehabilitation assistance.

DANDAKARANYA PROJECT

Dandakaranya Project in Koraput, Orissa was set up in 1958 for rehabilitation of displaced persons from former East Pakistan (now Bangladesh) in the Dandakaranya region and for integrated development of the area with particular emphasis on the interests of the local tribal population. Since the work relating to the settlement of the displaced persons in three zones of the project *viz.*, Kondagaon and Paralkote in Madhya Pradesh and Umerkote in Orissa, had more or less been completed, these zones have been normalised and the assets and institutions created in these zones have been transferred to the respective state governments except the zonal hospital at Umerkote. As regards the fourth zone, *viz.*, Malkangiri, funds required to meet the expenditure on deficiency and maintenance of the assets to be incurred by the Government of Orissa have been sanctioned. Some of the assets such as educational, institutional and MI schemes of the zone have already been transferred to the state government.

REPATRIATES FROM SRI LANKA

Under the Indo-Sri Lanka agreements of 1964 and 1974 and subsequent accord of January 1986, Government of India agreed to grant Indian citizenship and accept repatriation of 5.06 lakh persons of Indian origin from Sri Lanka, together with their natural increase. Till the end of April 1988, 1,15,532 families had arrived in India from Sri Lanka. The repatriates from Sri Lanka are granted primary/subsidiary rehabilitation assistance. Primary assistance consisting of 4,59,668 persons (3,34,033 accountable + 1,25,635 natural increase) consists of settlement under various schemes *viz.*, agriculture, small trade/business, plantations, industries, etc. Subsidiary assistance consists of housing and educational facilities.

As a result of ethnic disturbances in Sri Lanka from 24 July 1983 to 31 October 1987, 1,34,053 refugees arrived in India. Out of these, 19,581 refugees are reported to have gone back to Sri Lanka on their own from 24 July 1983 to 1 October 1987, when the illicit movement of boats between India and Sri Lanka was stopped. Before the commencement of the process of sending back of these refugees in terms of Indo-Sri Lanka Agreement of 29 July 1987, 22,477 refugees were staying in various camps in Tamil Nadu. In 41 batches, from 24 December 1987 to 27 July 1988, 22,017 refugees returned to Sri Lanka under the arrangement of the Government of India. There are 92,455 refugees remaining in India and out of these, 2,584 are housed in two transit camps in Tamil Nadu. The remaining refugees are staying outside the camps on their own. Till 30 April 1988, an amount of Rs 14.12 crore has been spent on providing relief assistance to Sri Lankan refugees and on construction/renovation of camps for accommodating them.

TIBETAN REFUGEES

Tibetan refugees began pouring into India in the wake of the flight of Dalai Lama from Tibet in 1959. At present, there are about 80,000 refugees spread in 10 states. Out of these, about 63,000 persons have either settled through self-employment or with the assistance of the Government under agriculture and handicraft schemes.

PENSION AND PENSIONER'S WELFARE

The Department of Pensions and Pensioners' Welfare was set up in March 1985. Its responsibilities include formulation of policy and coordination of matters relating to the retirement benefits of all Central government employees. The Department has also provided the much needed thrust towards having an integrated approach to the matters relating to post-retirement benefits with a view to attracting not only the best talent available to the civil services but also to ensure retention in the services with a view to making the services an effective engine for social and economic changes for the betterment of the people of the country.

In pursuance of these objectives, an integrated pension structure was started on 1 January 1986 based on the recommendations of the Fourth Central Pay Commission. The pension for full qualifying service of 33 years is now uniformly calculated at 50 per cent of average emoluments drawn during two months preceding the retirement. The benefit of the revised formula has also been extended to pre 1 January 1986 retirees and their pensions have also been substantially improved upon. The minimum pension/family pension is now Rs 375 pm. The pension structure for pre 1 January 1986 retires as well as those retiring on or after 1 January 1986 is now linked to average Consumer Price Index (1960 as base) and a rational system for grant of relief against inflation beyond CPI (1960) has been introduced. The provisions relating to retirement gratuity/death gratuity and family pension have also been substantially improved upon. These steps have resulted in simplification of pension procedures. A few more proposals for simplifying procedure for payment of pension are in advanced stages of processing. Administration of pension has also been made much more responsive as the Department is acting as a nodal agency for redressal of pensioners' grievances.

11 Mass Communication

MASS communication plays a vital role in creating people's awareness about policies and programmes of their development and motivating them to be active partners in the nation building endeavour. In the Indian context, a skillful synthesis between traditional and folk forms of communication on the one hand and the modern audio-visual media including Satellite Communication on the other, is being attempted. As the nodal Ministry in the field of mass communication, the Ministry of Information and Broadcasting has a comprehensive set-up of its mass media units with their regional and branch offices as well as mobile units operating in different parts of the country.

ELECTRONIC MEDIA

AKASHVANI

Radio broadcasts started in India in 1927 with two privately owned transmitters at Bombay and Calcutta. The Government took them over in 1930 and started operating them under the name of Indian Broadcasting Service. In 1936, the name of service was changed to All India Radio (AIR) — since 1957 it is known as Akashvani— and it was made a separate department. It is serving as an effective medium not only to inform and educate people but also to provide healthy entertainment.

BROADCASTING NETWORK

All India Radio's network consisted of six radio stations in 1947. Now there are 96 stations including three *Vividh Bharati*/commercial centres exclusively and two relaying centres. Commercial centres are at Chandigarh, Kanpur and Vadodara.Relaying centres are at Alleppey and Ajmer. In addition, there are two auxiliary studio centres at Bhubaneshwar and Shantiniketan. These cover all the important cultural and linguistic regions of the country. The programmes which are radiated from 173 transmitters, of which 137 are medium wave, cover 94.52 per cent of the population spread over 82.93 per cent area of the country.

MUSIC

Music was largely under the patronage of princely courts during pre-independence days. With the abolition of princely states after 1947, the task of preserving the musical heritage and propagation of music in all its variety, specially classical music, was taken over by AIR. Through the regular broadcast of music programmes from all AIR stations in the network, AIR has contributed largely to bring about an awareness and appreciation of Indian music—classical, light, folk and tribal.

About 37.57 per cent of the total broadcast of AIR at present, constitutes music programmes. These include classical and light classical music, light, devotional, folk, tribal, film as well as classical and light western music. Apart from the regular music programmes, AIR started way back in the 1950s some of the major network programmes, namely, the national programme of music and the *Radio Sangeet Sammelan*. A few years later the national programme of regional and light music as well as the zonal hook-up concerts by young artists were added to these programmes. Through these programmes, AIR brings to its listeners the best of musical talent available in the country on its network.

In order to create better appreciation of the musical heritage of the country, specially among the younger generation, AIR broadcasts music lessons and music appreciation programmes regularly from various AIR stations. New talent is continuously scouted through the regular music auditions as well as annual music competition. Young and promising artists of higher grades are featured in public concerts through a system of chain booking which enables artist of one region to get exposure in other regions of the country.

One of the significant achievements of AIR's national programmes and *Sangeet Sammelan* concerts is the integration of *Hindustani* and *Carnatic* styles which are the major styles of music in the country. Eminent artists as well as the most promising younger artists in both the styles are presented in these programmes. This has created a mutual appreciation and enjoyment of *Hindustani* music in the south and the *Carnatic* music in the north. During *Radio Sangeet Sammelan* a few *Hindustani* music concerts are arranged in the southern region and a few *Carnatic* music concerts in the northern region.

Another important milestone in AIR's music programmes is the inception of national orchestra known as AIR *Vadya Vrinda*, in Delhi and Madras. These orchestral units consisting of both *Hindustani* and *Carnatic* musicians have done remarkable experiments in orchestration of the Indian music under eminent conductors and have a wide repertoire of a variety of compositions based on traditional *ragas* and folk melodies as well as thematic compositions. These units are occasionally combined to give public performances. AIR pays equal attention to the preservation and development of folk and light music. Efforts in this direction include national broadcasts of folk and tribal music of various regions and special funds for production of high quality light music to various AIR stations.

Folk music forms a very important part of AIR's music programmes. About 11.77 per cent of the total music programmes, constitutes folk music. AIR stations regularly broadcast folk music both in the general as well as special audience programmes. They broadcast folk music of their own region in addition to that of other regions, for which, auditions are held. Apart from this, station's recording units regularly visit interior areas and do recordings on the spot for broadcast and screening. Folk music collection centres have been set up at 20 centres to systematically collect and preserve the folk music heritage of the country for future generations. The aim of these centres is to collect, index and preserve various types of folk music available in the country. These centres have been able to collect and broadcast some very rare items of folk music. AIR also participates in the International Radio Music Festival of Folk Music organised by ABU every year.

To develop mass singing as a means of achieving national integration, 17 stations have instituted choral groups. As an extension of this programme promotion of community singing as a movement throughout the country has now been taken up in a big way. With the objective of making mass singing among children very popular, specially selected songs with simple text and tunes are being propagated through broadcasts as well as training of teachers and students with the help of NCERT and educational institutions.

With a view to popularising and promoting community singing as a national movement, all the stations of AIR are broadcasting community songs 335 times a week. The lessons of such songs are being broadcast 96 times a week by all AIR stations. *Vividh Bharati* Service of AIR is also broadcasting community singing songs all over India.

Regional committees working at four stations are doing pioneering work in popularising community songs. One hundred and sixty six voluntary institutions and 264 educational institutions have been identified for this. Government and voluntary agencies are organising community singing camps, and AIR, in turn, extends coverage and cooperation to all such camps.

Two major music festivals-*Thyagaraja* and *Tansen*-are covered by AIR and excerpts are broadcast on the national as well as zonal hook-up. AIR also releases selections from its archives which has the most important collection of music records in the country, through gramophone records and cassettes.

Western music which commands sizeable listening in various parts of the country is given due attention by AIR. Western music is now being broadcast from 17 stations, some of them as a part of the youth programmes. These programmes bring to the listeners not only the western music artist of the country but also the best selections of recorded western music from all over the world Whenever eminent western music artists from abroad visit the country, AIR takes advantage of their presence by recording their music for its own listeners. The *Vividh Bharati* Service of AIR broadcasts popular music, film and non-film including folk, choral and patriotic songs.

Through overseas transmissions, AIR seeks to satisfy the cultural needs of Indian nationals living abroad.

The music archives of AIR has a huge repertoire of Indian classical, light and traditional music in all its variety and richness rendered by the great masters of yester years as well as contemporary singers. It has also decided to release discs/ cassettes of selected recordings from its archives for widest possible dissemination of various aspects of Indian Culture—particularly music amongst the people.

VIVIDH BHARATI AND COMMERCIAL SERVICE

Popular entertainment programme, *Vividh Bharati*, is broadcast from 32 centres, including two short wave transmitters at Bombay and Madras for a total duration of 12 hours and 45 minutes on week days and 13 hours and 15 minutes on Sundays and holidays. Film music, humorous skits, short plays and features are presented in these programmes.

Commercial broadcasting on the radio introduced on 1 November 1967 from Bombay-Nagpur-Pune, on an experimental basis, is at present carried by 29 centres. Advertisements are accepted in any language as tape recorded spots of 7, 10, 15, 20 and 30 seconds duration. Sponsored programmes were introduced in May 1970. From 1 April 1982 commercials have been introduced on a limited experimental scale on the primary channel with advertisements being allowed for a minute each before the national news bulletins in Hindi in the morning and evening and after the English news bulletins in the morning and evening.

The Commercial service on the primary channel (Phase 2) has also been introduced from 26 January 1985 from 55 AIR stations. Spots/sponsorships are being accepted in rural programmes, women's programmes, film/light music (Indian and Western) including listeners' choice, plays and other popular programmes.

PLAYS AND FEATURES

Each station broadcasts at least two plays every week. Besides original plays, radio adaptations of outstanding novels, short stories and stage-plays are also broadcast. Outstanding plays in Indian languages are broadcast in the national programme of plays which was started in 1956. A series of monthly chain-plays are also broadcast. Under this, 12 model plays are produced in a year and circulated amongst major stations. Serial playlets which project the current socio-economic issues are broadcast from many stations on weekly basis. Humorous plays and skits are broadcast on the entire network of *Vividh Bharati*. An all-India competition was organised in 1987 for Radio playwrights in 19 prominent regional languages. This scheme has been launched to encourage young writers to write specially for radio.

The national programme of features was started in 1956. It focuses attention on matters of national importance and interest in the political, economic, social and cultural spheres. The original script may be in English or Hindi but is invariably translated into regional languages and broadcast from all the regional stations.

NEWS AND CURRENT AFFAIRS

The history of news broadcast is much older than that of the All India Radio. The first news bulletin went on the air on 23 July 1927 from the then privately owned radio station at Bombay. It was a small medium wave 1.5 KW transmitter-run broadcasting unit. The news organisation of All India Radio, however, came into being in August 1937, when the first news bulletin was broadcast from Delhi. By 1939-40, All India Radio was broadcasting 27 bulletins and its news set-up was called Central News Organisation which later came to be known as News Services Division (NSD).

All India Radio is now broadcasting 273 bulletins for a duration of about 37 hours in its home, external and regional services. It has become one of the biggest news organisations of its kind in the world. The news broadcasts include 78 bulletins in 19 languages in its home service from Delhi. Their duration exceeds 11 hours a day. In the regional services, 127 bulletins including three from Delhi, are broadcast daily in about 62 languages and dialects for a duration of nearly 17 hours. In the external services, 67 bulletins in 23 languages are put out every day from Delhi, Calcutta and Madras for a duration of over nine hours. Special bulletins such as sports news and slow speed bulletins in English and Hindi are also broadcast. During the Haj period, a special bulletin of five minutes duration is put out daily for the benefit of Indian pilgrims. During the Parliament session, daily commentaries in Hindi and English reviewing the day's proceedings of both the Houses are broadcast. Weekly commentaries in English and Hindi are also put out covering the main developments during the period. Similarly, daily and weekly reviews of state legislatures are broadcast from state capitals in the languages concerned, by regional news units. In addition, commentaries from specialists in various fields and scripts from AIR's correspondents are broadcast in English, Hindi and Urdu in the programmes *Spotlight, Samayaki* and *Tabsara* respectively. In the current affairs programme every Sunday, specialists take up a live issue of the week for indepth discussion. Eyewitness accounts, interviews with important persons and reactions of the common man to the happenings around him are presented through radio newsreel, both in English and Hindi.

A major part of the news broadcast by AIR comes from AIR correspondents. It has 101 full-time correspondents in India. Besides, AIR correspondents are stationed at Singapore, Colombo, Dhaka, Dubai, Kathmandu, Harare and Islamabad. In addition, AIR has 232 part-time correspondents in India and abroad. It also subscribes to the news agencies like PTI, UNI, *Bhasha* and *Varta*. Another important source of news is the Monitoring Unit at Ayanagar near Delhi and a small unit attached to the General News Room in New Delhi itself. The two units together monitor 144 transmissions daily from various foreign broadcasting organisations in nine foreign and five Indian languages.

Voice-casts of AIR correspondents are frequently inserted in main bulletins on important occasions to make the bulletins lively and more interesting. The Pronunciation Unit of NSD has been reorganised to provide better service to broadcasters in AIR and Doordarshan.

EXTERNAL SERVICES

The External Services Division of All India Radio broadcasts programmes for 72 hours and 55 minutes every day. This is 12 hours 20 minutes more than it was broadcasting last year and is due mainly to the introduction of new Tamil Service of 12 hours daily from 21 November 1987.

The ESD broadcasts in 23 languages (sixteen foreign including English and seven Indian). These programmes consist of News, Daily Commentary, Press-review, Talks, Interview, Discussions and Music, mainly Indian. These are broadcast in two major services, General Overseas Service in English (9 hrs. 30 mts.) and Urdu Service (12 hrs. 15 mts.). The West Asian Service broadcasts programmes in Arabic (3 hrs. 15 mts.), Dari (1 hr. 45 mts.), Persian (1 hr. 45 mts.), Pushtu (2 hrs.) and Baluchi (30 mts.). East African countries are served by the Swahili Service (2 hrs.). The French Service (45 mts.) is directed to West and North-West Africa. Other area-oriented services are in Russian (1 hr.), Burmese (1 hr. 30 mts.), Chinese (2 hrs.), Indonesian (30 mts.), Sinhala (2 hrs.), Thai (45 mts.), Nepali (1 hr. 55 mts.) and Tibetan languages (1 hr. 45 mts.). For Indians abroad, there are services in Indian languages viz., Bengali (6 hrs. 45 mts.), Gujarati (1 hr.), Hindi (4 hrs.), Punjabi (2 hrs.), Tamil (12 hrs.) and Urdu (12 hrs. 15 mts.) These broadcasts project the Indian point of view on world affairs and acquaint the overseas listeners with the development in India along with information on the myriad facets of Indian life, thought, culture, tradition and heritage. The ESD has assumed the role of a cultural ambassador of India to the world at large and is projecting and promoting the Indian image abroad. Its unbiased political commentary and reportage have earned credibility among the listeners which is constantly being reflected in about 12,000 letters received every day.

During the period under review, extensive coverage was given to almost all conferences, seminars, symposia of national and international importance. Different programme formats such as Curtain-raiser Talks, Radio-reports, Interviews, Discussions and Features were utilised for their coverage. The visits of foreign dignitaries to India and Indian leaders abroad were covered as well. A number of programmes were broadcast covering the visits of our Prime Minister to the USSR, the USA and Canada (Vancouver-CHOGM conference). Coverage was also given to the Festival of India in the USSR. Various facets of Indian life, achievements of India and its development since independence have been well reflected in our programmes.

Since the signing of the peace accord with Sri Lanka on 29 July 1987, ESD has been playing a vital role in convincing the majority Sinhalese and minority Tamils in Sri Lanka, of the imperative need for peace and the vast benefits that will accrue from the dawn of a peaceful era in the Emerald Island.

Since 12 September 1987, ESD started beaming UN News to different parts of the globe on every Saturday. "Commercials" in the Gulf Service in Hindi being broadcast from 2315 hours to 0000 hours (IST) have been introduced on an experimental basis from January 1988. Its primary purpose is to acquaint the large number of listeners in West Asia, of the manufacturing potential of consumer items in India. A special weekly composite programme (consisting of News, Commentary, Talks, Music, etc.) is sent for ethnic stations in USA, Canada, UK, etc.

PROGRAMME EXCHANGE

ESD supplies recordings of different types of programmes to more than 100 foreign broadcasting organisations. Recording of weekly press review is supplied to the Broadcasting Foundation of America. Recordings of special orchestral compositions produced in connection with the Republic Day and the Independence Day are supplied to about 65 countries and half-an-hour recordings of music items are sent once in a quarter to these countries under the cultural exchange programme.

PROGRAMME JOURNAL

Since April 1987, ESD has been publishing a monthly programme journal *India Calling*. In addition, quarterly folders in ten foreign languages (Nepali, Pushtu, Swahili, Tibetan, Arabic, Burmese, Chinese, Dari, French and Indonesian) are also published providing advance information of the programmes to be broadcast in the External Services. The journal also carries, selected excerpts from the Talks broadcast, letters from listeners and other infotmation. The publications are supplied free to overseas listeners'and are well received. Reports, based on the analysis of the listeners letters, are brought out regularly so as to discern the broad trends of listeners' reaction.

PROGRAMMES FOR SPECIAL AUDIENCE

The programmes for special audiences and occasions include those for the armed forces, women and children, the youth, students, rural and tribal people and industrial workers. Fourteen AIR stations broadcast daily programmes for the armed forces, while 60 stations present programmes twice a week in regional languages for women.

Family welfare programmes are planned and produced by 36 family welfare units at various stations of AIR. Almost all stations broadcast family welfare and health programmes in a general way. These programmes are integrated with the general programmes as well as those meant for special audiences. Almost all AIR stations broadcast programmes specially for rural listeners for about 30 to 75 minutes every day. In addition, a daily programme on hard-core agriculture is broadcast for 45 to 55 minutes from 64 farm and home units located in different stations.

Yuva Vani provides a forum for self-expression to the youth who constitute the majority, gives them a sense of partnership in the country's destiny and ensures their involvement in·hastening the process of nation building. AIR stations broadcast this programme in varying duration and frequency in different languages and different formats. This service is open to persons in the age group of 15-30. AIR Delhi, Calcutta, Hyderabad, Jammu and Srinagar broadcast these programmes for long hours on a separate transmitter under *Yuva Vani*. The service is of the youth, by the youth and for the youth. Opportunities are provided for the participation of the rural youth and stations like Shimla, Nagpur and Tiruchi include non-formal education in the *Yuva Vani* programmes.

For students in schools, most of the AIR stations broadcast programmes based on the school curriculum to reach students in the interior areas. Radio support to university correspondence degree courses is also provided by several stations.

FAMILY WELFARE BROADCAST

All India Radio started broadcasting programmes on family planning now known as family welfare on a regular basis in the late sixties to provide radio support to the National Family Planning Programme. In the late seventies, the Family Planning service delivery system was integrated into health package of service particularly the maternal and child health and nutrition activities, and the entire integrated activity was called as Family Welfare.

Although intensive Family Welfare broadcasts are made from 36 AIR stations, other stations also include in their schedules/programmes related to Family Welfare. Particular emphasis is laid on 'Two Children Norm', 'Spacing Methods', 'Use of Contraceptives', 'Raising of Marriage Age', 'Terminal Methods of Family Planning' and 'Women's Education'. Health protective measures in respect of immunisation, AIDS, drug abuse, goitre control, control of rabies, epilepsy and blindness etc., are highlighted frequently. The number of programmes broadcast on Family Welfare has gone up significantly during the current year compared to the past years. The thematic approach of AIR's Family Welfare programmes is to help people perceive that health is an inseparable part of the fertility control.

RURAL PROGRAMMES

Rural programmes are broadcast from almost all AIR stations in different languages and local dialects. In the year 1966 in consultation with the Ministry of Agriculture and Irrigation, All India Radio set up Farm and Home Units in selected AIR stations to provide relevant and problem-oriented technical information to the farmers of a small homogenous area with similarity of agro-climatic condition. This marked the beginning of a new era of farm broadcasting in the country. More units were set up in subsequent years and at present 73 Farm and Home Units in the country provide specialised farm broadcasting service. There is a proposal to establish Farm and Home Units in all AIR stations. The main ingredients of the Farm and Home broadcasts are hints on agricultural practices, scientific methods of cultivation, soil and water management, fertiliser application, plant protection measures, storage and marketing, etc. Special programmes are broadcast in support of the programmes sponsored by small farmers' development agency, marginal farmers and agricultural labourers, dry farming and drought-prone areas schemes, applied nutrition programme, adult education, national demonstration schemes etc., with greater emphasis now on integrated rural development programmes. Topics on health, hygiene, nutrition, cottage industries and various other aspects of rural life are also included in the general rural programmes. The total duration of such broadcasts has gone up to 21 hrs. in a month. The basic thrust in the agricultural programmes has been the ways and means for increasing production of cereals, pulses, oilseeds, vegetables, fruits, animal products and fish. This programme made the people aware of the 20-Point Programme and its benefit to the poor.

Farm and Home Units are broadcasting programmes for rural women and rural children also once or twice a week. Topics like women's education, vocational training, self-employment schemes, legal literacy, training facilities in agriculture, storage of grains at/home, poultry rearing, kitchen gardening, health and hygiene, foods and nutrition, mother and child care, women's cooperatives etc., are included for broadcast. Eighteen AIR stations broadcast special radio series on mother and child care to organise rural women listening groups in rural areas, etc.

AUDIENCE RESEARCH

Audience Research is a functional activity providing basic data for feedback, ready reference and analysis for programme planners on various aspects pertaining to audience composition, its habits, tastes, preferences, exposure, extent of coverage, impact of the programmes, etc. This forms the basis for determining the necessary remedial actions related to programme policies and their qualitative aspects. The present structure of audience research consists of three tiers. At the headquarters, the Unit is headed by Director, Audience Research. At the intermediate level, there are five units each under the charge of a Deputy Director, including the one for the Commercial Broadcasting Service of the Central Sales Unit, Bombay. At the peripheral level, there are 20 units located at various AIR stations, each headed by an Audience Research Officer.

During the year 1987-88 Audience Research Units conducted 59 field surveys mainly on: (i) listening behaviour of population inhabiting border areas; (ii) listening to running commentary of cricket test matches; (iii) feed-forward studies for the new coming up AIR stations; (iv) science broadcast; (v) family planning, etc. Besides, Audience Research Units conduct every week qualitative feedback surveys related to national programmes. In addition, around 140 weekly quick feedback studies on qualitative aspects of the programme on National hook-up were completed during the period. A few large scale mail surveys were also carried out on programmes like Drama Festivals, Social Forestry, Family Welfare programme, etc.

TRANSCRIPTION AND PROGRAMME EXCHANGE SERVICE

Transcription and Programme Exchange Service has three programme wings—Archives, the Transcription and the Programme Exchange Unit. This service of AIR helps different stations to receive and exchange outstanding programmes, transcribes the speeches of eminent personalities and maintains the Library of Sound Archives.

The Archives Library, set up in 1954, collects and preserves on a permanent basis the recorded speeches of President, Vice President and Prime Minister. Voice recordings of eminent Indian and foreign personalities have been preserved. The Archives has the unique privilege of having recorded the voice of Mahatma Gandhi for over 50 hours. The Library has about 3,000 tape recordings of Jawaharlal Nehru's and about 2,900 of Indira Gandhi's speeches.

Among other valuable items preserved are: (i) recitations from the *Vedas* in Sanskrit in the traditional style, (ii) poetry recitations by eminent poets in Hindi and other languages, (iii) recitals by old masters of music, both Hindustani and Carnatic, (iv) selected items of music by eminent musicians representing different *gharanas*, representative pieces of folk music, devotional music and stage songs, and (v) recordings of freedom fighters. Over 2,100 hours of music of great masters—both Hindustani and Carnatic and folk and regional music have been preserved so far and special efforts are being made to collect rare and old recordings of master musicians.

Reviews on sports events with suitable flashes of commentary have been prepared out of 200 hour recording of the IXth Asian Games, 1982. Archives took up further a great task of preserving oral History and Radio Biography from various renowned personalities in the field of art, literature, history and culture, science and technology, etc.

Extensive use of archival material is being made by AIR for preparation of different categories of national programmes. The Delhi station of AIR has been broadcasting since April 1974 a weekly programme entitled *Chayan* for one hour on Sundays, based on the recordings available in the Archives. A similar weekly programme of half-an-hour entitled *Sanchayita* is broadcast from *Yuva Vani* service. Festivals of India and cultural exhibitions abroad and gramophone companies have made use of the Library by releasing their pamphlets and records from time to time.

Programme Exchange Unit (PEU) of this service circulates recordings and scripts received from AIR stations and foreign broadcasting organisations. All national programmes of music, plays, features, talks/interviews and discussions are circulated among the stations. Contributions from about 50 foreign broadcasting organisations are received, processed and circulated to AIR stations.

The PEU Library is in possession of 3,000 hour recordings which include 70 hours Sanskrit language lessons, 50 hours English language lessons, 64 hours ***Manas Gaan***, 20 hours Indian language lessons, in addition to serial skits, plays, features, talks/interviews/discussions in spoken word and classical (Hindustani/Carnatic), light and folk music of different regions of the country. Recently one hundred master tapes of obituary music prepared by the Central Music Unit were put into circulation, after duplication of recordings on ten thousand tapes to all AIR stations. In all, 5,033 hours recorded tapes were distributed to AIR stations on their demand. This Unit feeds to all stations and meets their day-to-day requirements.

RESEARCH

Research Department of All India Radio was set up in April 1936 with its primary aim to make radio wave propagation studies in medium and high frequency bands for scientific planning of broadcast services and to investigate problems related to the maintenance and development of broadcasting in the country. Doordarshan, too, has been incorporated in its purview. The basic activities of the Department are:

1. To undertake studies, investigations and R and D work for improvement of sound and TV broadcasting networks in the country, keeping in view the largest and futuristic advancements in the field;
2. To provide technical support to the operations of Akashvani and Doordarshan networks;
3. To undertake design and development of laboratory models of equipment needed by Akashvani and Doordarshan networks in large quantities and to draw out their specifications in order to transfer technical knowhow for commercial production, monitor development up to first production by commercial organisation and conduct field tests and evaluation;
4. To participate and offer expert advice on behalf of AIR and Doordarshan in national committees, ISI, Department of Electronics, etc., in formulating national standards;
5. To study, analyse and wherever necessary carry out investigations in problems identified by CCIR, ABU, CBA, etc., so as to ensure that India's interests are safeguarded in international conferences, and
6. To undertake on a reference from the engineering wings of Akashvani and Doordarshan, testing and evaluation of Sound and TV equipment of all kinds which are proposed to be inducted into normal operations.

During the year 1987-88, Research Department had started a project of establishing the National centre for "Digital Techniques in Broadcasting" with the UNDP assistance under Country Programme—III. The objectives are to plan and coordinate the introduction of digital techniques in TV and sound broadcasting in the country.

DOORDARSHAN

Television was introduced in India as an experimental service in September 1959 with a limited transmission three days a week. The regular service, however, started in 1965. In 1976, Television was delinked from All India Radio to form an independent organisation, Doordarshan. In the third decade of its operational life, it has emerged as a very large national network. It witnessed an unprecedented growth of installation of one transmitter a day in 1984 and after. Through a network of 340 transmitters, Doordarshan now reaches an estimated 80 per cent of the population. There are 18 programme originating Kendras at Delhi, Calcutta, Cuttack, Madras, Bombay, Lucknow, Jalandhar, Srinagar, Jaipur, Hyderabad, Ahmadabad, Bangalore, Gorakhpur, Rajkot, Ranchi, Nagpur, Guwahati and Trivandrum. By the end of the Seventh Plan, the number of such centres is likely to be raised to 48 with a total number of 423 transmitters.

In addition, Raipur, Muzaffarpur and Gulbarga have the facilities to telecast programmes produced at other Kendras. Eight relay centres were also established at Mussoorie, Kanpur, Pune, Panaji, Amritsar, Asansol, Murshidabad and Kodaikanal.

Introduction of satellite technology and its use for Doordarshan was a unique experience. Since 1982, Doordarshan also started transmitting the National Programme from Delhi for a duration of 155 minutes from 8.40 pm to 11.15 pm every day. To cater to the interests of the local people, Doordarshan commenced its INSAT service in six states namely Andhra Pradesh, Orissa, Maharashtra, Gujarat, Bihar and Uttar Pradesh. With the availability of the satellite transponders, Doordarshan is now telecasting programmes in the regional language originating from Bombay for all the transmitters in Maharashtra and similarly for all the transmitters in Andhra Pradesh programmes originating at Hyderabad are being telecast. Such programmes are received by a large section of rural audience on the Direct Receiver Sets (DRS), via satellite and the Very High Frequency Sets (VHF), through the LPTs and HPTs installed in the region. With the commissioning of INSAT-1C, the regional service is proposed to be extended to Orissa and Karnataka. This phenomenal expansion backed by indigenous technology has helped in linking a major part of the country's rural and remote areas with the national mainstream. India's national multi-purpose satellite INSAT-1B is currently being made use of for telecommunication, meteorology and radio besides television. Doordarshan also started telecasting the programmes in colour from August 1982.

To cater to the wider interests of a large cross-section of the population, Doordarshan introduced the second channel of transmission in Delhi in September 1984 followed by commissioning the second channel in Bombay, Calcutta and Madras. This has been a landmark towards fullfilment of the target of the three-tier service to the people namely the national service, the regional service and the local service. The introduction of second channel has offered viewers an alternative viewing of their choice and interest. In 1988, the Central Production Unit had been established in the Directorate to undertake production of prestigious programmes and serials. Doordarshan has also undertaken ventures of co-production of programmes with different organisations and eminent producers.

A special scheme has been evolved for the north-eastern region wherein Guwahati will become the focal-point for transmitting programmes in the regional languages of all the seven states in the north-eastern region.

Doordarshan introduced its first school television (ETV) in October 1961. Educational programmes, both of enrichment type and syllabus-oriented, are being put out by several Doordarshan Kendras. Programmes for the universities have also been introduced since August 1984 in collaboration with the University Grants Commission. INSAT-1B is being utilised for promotion of primary education in six selected states, namely, Orissa, Bihar, Andhra Pradesh, Uttar Pradesh, Maharashtra and Gujarat. The programme is of enrichment type in the respective regional language of two segments for the two age-groups of 5-6 years and 9-11 years. The total duration for each state is of 45 minutes. Area specific programmes for a duration of 35-40 minutes relating to agriculture, irrigation, health and family welfare are also telecast in these states in the local languages. To enhance the extent of viewing, the community TV sets have been provided by the panchayats, education department and the cooperatives. In distant and remote areas, Direct Reception Sets have also been installed to receive TV signals.

Doordarshan has successfully undertaken challenging assignments like the coverage of the 9th Asian Games in 1982, the Non-Aligned Meet and CHOGM in 1983, SAARC Conference in 1986 and the Reliance Cup Cricket in 1987, etc.

Doordarshan introduced booking of commercial spots on 1 January 1976. Currently in addition to the spots, series of sponsored programmes are being telecast. This has not only offered variety in the TV transmission but also involved participation of a large number of outside talent for the production of programmes resulting in an increase in government revenue.

Doordarshan started its morning transmission initially for a duration of 45 minutes a day in February 1987. Recently, the transmission duration has been increased to one hour to include Hindi and English News Bulletins, Health Programmes, Children's programmes, Music and Dance items as well as skits. The transmission is relayed by all transmitters operating in the country.

Tele-text service was introduced at the Delhi Kendra to transmit news and information on Railway Time-table, Air Services, Stock Market and Weather Forecast, etc. In the beginning, this service was available to the viewers with the help of a decoder attachment. Recently, however, the service is provided on Channel-II and is available to the viewers without a decoder attachment.

Future plans lay emphasis on augmentation of software facilities including of area specific television service, setting up of studio centres at the state capitals and commissioning of satellite microwave and tract links for relay from the state capitals to other transmitters in the state. The basic aim is to provide three segments in television programmes—national, regional and local for viewers living in different parts of the country.

PRESS AND PRINT MEDIA

REGISTRAR OF NEWSPAPERS FOR INDIA

The office of the Registrar of Newspapers for India commonly known as 'Press Registrar' came into being on 1 July 1956. The duties and functions of the Press Registrar are defined in the Press and Registration of Books Act, 1867, as amended from time to time. Apart from these duties, the Registrar also allots newsprint and recommends import of printing machinery for newspapers.

Indian press includes 36 centenarians. The Gujarati daily *Bombay Samachar*, published from Bombay is the oldest existing newspaper. It came into existence in 1822. *Anand Bazar Patrika, Punjab Kesri* and *Jugantar* retained the first second and third position respectively as per circulation is concerned.

At the end of 1987, the total number of newspapers was 24,629 compared to 23,616 in 1986, an increase of 4.2 per cent. Among them, 2,151 were dailies, 132 tri/bi-weeklies, 7,501 weeklies and 14,845 other periodicals.

Newspapers were published from all the states and union territories except Arunachal Pradesh and Lakshadweep. Uttar Pradesh claimed the top position of being the largest publisher with 3,468 newspapers. It was followed by Delhi (3,194), Maharashtra (2,939) and West Bengal (2,550). More than one thousand newspapers were also brought out from Rajasthan (1,513), Tamil Nadu (1,445), Andhra Pradesh, (1,337), Karnataka (1,221) and Kerala (1,212).

In the case of dailics also, Uttar Pradesh maintained its top position with 310 newspapers, followed by Maharashtra (218) and Bihar (212).

Newspapers were brought out in 92 languages and dialects. Apart from the sixteen principal languages, newspapers were published in 76 other languages, and a few in foreign languages. The highest number of newspapers were published in Hindi (7,783) followed by English (4,322).

CIRCULATION

Table 11.1 shows publication of newspapers language-wise at the end of 1987. Total circulation of newspapers/periodicals as on 31 December 1985 was 64,051,000 copies as compared to 61,981,000 copies in 1984 indicating an increase of 3.3 per cent. According to the circulation data made available by the press, 238 come in the category of big newspapers (having circulation of more than 50,000 copies), 494 in medium category (with a circulation between 15,001 and 50,000 copies) and 6,119 small category (with a circulation up to 15,000 copies).

OWNERSHIP PATTERN

The largest number of newspapers in all languages, except Sanskrit and Kashmiri, were owned by individuals during 1986. Individual-owned newspapers were also having the biggest share in circulation with 37.6 per cent.

PRESS INFORMATION BUREAU

The Press Information Bureau (PIB) is the Central agency of the Government of India to disseminate information on its policies, decisions, programmes and activities. The information put out by PIB goes to daily newspapers, news periodicals and news agencies, as well as radio and television organisations both Indian and foreign. With a country-wide teleprinter network and air bag facilities, PIB reaches newspapers not only in Delhi, but in all other parts of the country as well. No other organisation in the country reaches such a large number of newspapers and other media. While about a thousand newspapers subscribe to the wire news agencies, PIB distributes its press material to over 7,000 newspapers.

TABLE 11.1 NUMBER OF NEWSPAPERS (LANGUAGE AND PERIODICITY)

Language	Dailies	Tri/bi Weeklies	Weeklies	Fortnightlies	Monthlies	Quarterlies	Others	Annual	Total
Hindi	830	36	3,560	1,278	1,684	283	94	18	7,783
English	184	16	496	391	1,772	883	474	106	1,322
Assamese	3	2	30	18	28	8	6	—	95
Bengali	61	12	458	318	520	311	101	7	1,728
Gujarati	46	4	207	103	355	40	26	9	790
Kannada	125	4	212	103	289	31	11	2	804
Kashmiri	—	—	1	—	—	—	—	—	1
Malayalam	143	1	135	124	516	31	13	5	968
Marathi	155	14	425	116	364	73	33	70	1,250
Oriya	22	—	53	41	170	51	13	4	354
Punjabi	45	1	210	46	183	22	17	—	524
Sanskrit	2	—	5	1	12	12	3	—	35
Sindhi	7	—	25	8	30	3	2	—	75
Tamil	155	5	169	164	493	18	6	1	1,011
Telugu	61	2	184	116	290	17	5	—	675
Urdu	224	13	798	225	366	35	12	3	1,676
Bilingual	34	13	395	217	780	239	85	25	1,788
Multilingual	9	4	67	38	170	90	23	6	367
Others	45	5	71	32	101	57	12	—	323
TOTAL:	2,151	132	7,501	3,366	8,123	2,164	936	256	24,629

FUNCTIONS

The main functions of the Bureau are to put out information on Government policies, programmes and activities, obtain feedback on how these policies, programmes and activities are received, and to apprise the Government of public reaction as published in the news and editorial columns of English and Indian language newspapers. The Bureau also advises the Government on its information policy.

Officers of the Bureau at its headquarters in Delhi are attached to different Ministries and Departments of the Government of India. These officers are in daily contact with their Ministries and Departments. They explain and interpret Government policies and disseminate factual information. The Departmental publicity officer also performs the role of public reaction evaluator, keeping the Government in touch with public opinion besides providing explanation and backgrounders to official pronouncements. He also acts as an adviser to the Government on press relations and publicity. He maintains constant liaison with newspaper correspondents as well as representatives of other mass media.

In dissemination of information, the Bureau employs a variety of means. Written material issued by the Bureau includes press communiques, press notes and handouts, backgrounders, features and newsletters. The material is put out in English, Hindi, Urdu and 13 other Indian languages. The Bureau also arranges press conferences and briefings to enable media representatives to get the news and clarifications at first hand.

PICTORIAL SERVICES

PBI arranges photo coverage of Government activities. A large number of photographs on Government activities are supplied to dailies and periodicals all over the country to enable them to supplement written coverage by pictures. The Bureau has its telephoto equipment with which photographs are transmitted the same day to some of its regional and branch offices. The Bureau supplies ebonoid blocks to small and medium newspapers which have no facility to make their own blocks. *Charbas* are supplied to Urdu newspapers for use in the litho process.

ACCREDITATION

At present, there are 524 journalists accredited to the Government at the headquarters. They include correspondents of news agencies, newspapers, editor-cum-correspondents, correspondent-cum-cameramen, cartoonists and cartographers. In addition to this, there are 179 accredited correspondents of foreign news agencies, foreign newspapers, foreign broadcasting and television organisations in the capital.

CULTURAL EXCHANGE PROGRAMMES

The Bureau is the implementing agency for exchange of delegations of journalists between India and foreign countries under cultural exchange programmes and protocols.

REGIONAL AND BRANCH OFFICES

The Bureau has a network of three regional offices at Bombay, Madras and Calcutta, 27 branch offices and five branch office-cum-information centres, most of which are linked with the headquarters by teleprinter network. It has two separate information centres located at Aizawl and Port Blair. Through the regional and branch offices, the Bureau supplies press material to newspapers and other news media of various Indian languages, besides Hindi and English in all parts of the country. Libraries are also attached to the information centres which serve as repositories of information on various developmental matters.

NEWS AGENCIES

PRESS TRUST OF INDIA

Press Trust of India (PTI) was set up on 27 August 1947, as a non-profit sharing cooperative of newspapers, with a mandate to provide economical, efficient and unbiased news service to all its subscribers without discrimination. PTI took over the Associated Press of India (a news agency set up in 1908) and the 'Indian operations' of the Reuters news agency. It began functioning from 1 February 1949.

Today, PTI's news service in the English language crosses about 1,00,000 words per day. A network of 136 bureaux and about 30 stringers abroad, a support staff of over 1,000 and arrangements with several trans-national and national news agencies make up the backbone of this service.

The eighties have been the years of modernisation and diversification for PTI. As part of its modernisation programme, PTI's news operations were computerised in 1984. With the objective of delivering news reports faster, it has now gone for high-speed electronic printers in place of 50-band electro-mechanical teleprinters. PTI shortly hopes to reach its services direct to the subscriber through INSAT-1B. An experiment in this regard has already been successfully conducted. Through satellite mode of dissemination, PTI hopes to overcome the snags associated with the present point-to-point transmission. The accent of PTI's modernisation is on adaptation of the latest technology to suit its needs and also those of its subscribers.

PTI has also created a separate R&D wing. In collaboration with the Madhya Pradesh State Electronics Development Corporation, it has set up a production facility in Bhopal called the National Information Technologies Ltd. It is to manufacture information and communication related equipment for use by PTI and other media consumers.

The process of diversification has seen PTI bringing out *Economic Service, Corporate Trends* and *Science Service* as fortnightly mailers and weekly features in English and Hindi. A *News-Scan* for display of news on video monitors was started in 1982 which provides on a TV screen news in capsule form round-the-clock. The large number of subscribers include ministries, hotels, airports and public-sector undertakings. A Com-Scan service of commercial news on video terminals has been since late 1987. PTI has integrated the major Indian stock exchanges in a simultaneous display of inter-market share prices on electronic boards.

This process of diversification has also seen the creation of *Bhasha*, a news service in Hindi started in April 1986, and PTI-Photo, India's first wire photo service, which began in October 1987. In early 1986, PTI also set up a television facility which has been producing news clips, documentaries and video films for Doordarshan and other clients.

PTI is to shortly launch a news service in Marathi language on the lines of the Bhasha news service in Hindi. Also on the anvil is a 'Newsbank' facility through which PTI hopes to provide newspapers other ready-to-use background material and current data on a variety of subjects.

PTI is a leading participant in the Pool of News Agencies of the Non-Aligned countries and the Organisation of Asia-Pacific News Agencies (OANA). From March 1985 till July 1988, PTI was the president of OANA. It is a major redistribution centre in the news exchange arrangements of both Non-Aligned News Agencies Pool and OANA.

UNITED NEWS OF INDIA

UNI was registered as company in 1959 and started news operations in March 1961. In May 1982, UNI launched its news services in Hindi under the credit line of *Univarta*. It had started photo service from 10 September 1987. It operates a news service to media in four Gulf countries. It has full-fledged bureaux in Dubai, Washington and Singapore and correspondents in 22 world capitals. It started its own TV news wing in July 1986 and has been making regular contribution of news clips and news features to Doordarshan and other organisations.

NON-ALIGNED NEWS AGENCIES POOL

The Non-Aligned countries met for the first time at the level of Information Ministers in July 1976 at New Delhi and in a declaration took note of "the persistent and serious imbalance in the current global information situation" and its adverse effects on the Non-Aligned countries, stressed the need "to liberate their information and mass media" from the colonial legacy and expressed their collective determination to rectify this situation. The declaration called for "the decolonisation of information" and "the establishment of a new international order for information", which was felt to be "as necessary as the new economic order". To give practical shape to this, the Non-Aligned News Agencies Pool was set up on 13 July 1976.

The News Agencies Pool of the Non-Aligned countries is a system of news exchange based on professional cooperation, equality and coordination among the Pool partners.

India, which played a leading role in the formation of the Pool, was elected the first Chairman of the Coordinating Committee, from July 1976 to November 1979.

India was elected a member of the Pool's Coordinating Committee at its Third General Conference held in Tunis in November 1982, and re-elected at the Fourth General Conference held in Havana in March 1986. India participated in the last Coordination Committee meeting held at Djakarta in September-October, 1988. At the Tunis General Conference, a resolution was passed to form a Monitoring Group for closer review and monitoring of the Pool operations. Seven meetings of the Group have been held so far. At present, the group consists of Indonesia, India, Egypt, Zimbabwe, Peru and Yugoslavia.

Press Trust of India operates India News Pool Desk of the Non-Aligned News Agencies Pool. India is currently having direct communication link with Belgrade, Djakarta, Baharain, Havana, Colombo, Hanoi, Kuala Lumpur, Tunis, London, Harare and Baghdad, through satellite; with Kathmandu, Dhaka and Islamabad through terrestrial link and through radiobeam service to Kabul.

PRESS COUNCIL

Under the Press Council Act, 1978, the first Press Council of India was constituted in 1979, the second in February 1982 and the third in July 1985. The term of the Council is for three years.

Press Council safeguards freedom of the press, maintains and improves the standard of newspapers and news agencies. It is comprised mainly of representatives from the newspapers who are charged with the responsibility of regulating the conduct of their brethern. The Council has thus come to assume the role of a self-regulating body of the newspapers themselves.

The Council has the power to consider complaints *suo moto*, in addition to inquiring into complaints brought before it. It has also been empowered to make observations against any authority including Government if it considers it necessary for the performance of its functions. The Council registers cases also, some of which are dismissed at the preliminary stages and others are disposed of by way of adjudications. Justice R S Sarkaria is presently the Chairman of the Council.

RESEARCH AND REFERENCE DIVISION

The Research and Reference Division performs a basic and pivotal function as an information servicing agency to the Ministry of Information and Broadcasting, its media units and their field offices. It serves as an information bank as well as an information feeder service to the media units as an aid to their programming and publicity campaigning work. The Division studies, in particular, trends in mass communication media and maintains a reference and documentation service on current affairs and mass communication.

The Division was initially created in May 1945 but was abolished during the same year following a cut motion in the Central Legislative Assembly. Later, on 9 August 1950, it was revived and was given the following tasks: (a) to undertake research on matters of publicity, (b) to provide guidance and background notes on current affairs and other topics, (c) to build up a compendium of knowledge on important subjects and (d) to prepare publicity material for the use of various media units of Ministry of Information and Broadcasting.

The Division compiles and provides on its own initiative on a regular basis as well as on demand from its clients, backgrounders, reference papers, diary of events, etc., on events and issues of public importance as well as biographical sketches of eminent personalities in different fields of national life.

The Division compiles annually a comprehensive book of reference on India. It includes information on India's geographic and demographic features; its polity and economy; its plans and programmes for socio-economic development, etc. This reference annual has been coming out regularly since 1953 and is rated high as a standard book of reference on India.

The Division runs a well-stocked library which is utilised by the media unit officers and pressmen. Built around the library is a whole range of documentation activity, under which books, articles appearing in journals, reports and reference papers received from the ministries, departments and a number of public and private institutions are indexed and catalogued subject-wise. A separate unit scrutinises leading newspapers in the country to take out clippings on a variety of current events and issues and indexes them subject-wise. This vast storehouse of ever-growing information materials is put to use by the officers of the Division for preparing background and reference papers and for meeting special day-to-day queries and demands from the media units of the Ministry, other ministries and departments of the Government and the pressmen.

The National Documentation Centre on Mass Communication was set up as part of the Research and Reference Division in 1976 with the broad objective of collecting, interpreting and disseminating information relating to the agencies, events and trends in the field of mass communication, including press, radio, television, advertising, traditional and folk media, and different media units of the Central and state governments. The Centre documents and indexes all news items, articles and other information material relating to all aspects of mass communication and mass media. The Centre disseminates the information collected by it through nine regular documentation services. The Centre brings out a reference annual on mass communication, under the title *Mass Media in India*.

PHOTO DIVISION

Photo Division is the largest photographic unit of its kind in the country. Its annual production is over six lakh photographic prints which are used for internal and external publicity. The Division has a valuable collection of photographic negatives of archival value relating to the major news events as well as collection of photographs showing socio-economic development in the country. The caption and the positive print albums are maintained in a separate photo library under the Press Information Bureau. The library is the main feeding channel to the outside agencies. The Division has a well-equipped colour laboratory to meet the requirements of colour prints.

The Division supplies newsworthy black and white photographs of important national and international events to the Press Information Bureau for distribution to the press in India and missions abroad, Officers of the Division accompany the Prime Minister and other VIPs abroad for photo coverage and transmit radio photos of the coverages for publicity in the Indian press.

Photographs are supplied free to press through the Press Information Bureau and on payment to various Government departments, non-publicity organisations and members of public for their use. The Division undertakes training programmes to the photographers from Commonwealth countries under the Colombo Plan.

The Photo Division has its main office at New Delhi and regional offices at Bombay, Calcutta and Madras. Mobile Unit at Lucknow has been closed down as a part of re-structure and a new Photo Unit is being set up at Guwahati.

PUBLICATIONS DIVISION

Publications Division is responsible for the production, distribution and sale of books and journals on all subjects of national importance with a view to providing up-to-date and authentic information to public at home and abroad. In the process of discharging this responsibility, it has emerged as the largest bureau of publishing and marketing in the public sector. Originally set up in 1941 as the foreign branch of Bureau of Public Information, the Division acquired its present name and identity in 1944.

The aims of the Division are: (1) to disseminate information about various spheres of national development activities; (2) to promote national integration by creating greater awareness and understanding among the people of different regions adhering to different faiths and beliefs, and (3) to stimulate interest in and to generate appreciation of and respect for the variegated pattern of life and culture of India.

The books, albums and journals brought out by the Division cover a wide spectrum of subjects ranging from art and culture, flora and fauna, travel and tourism, biographies of the builders of modern India, speeches of national leaders to subjects of children's interest. The publications also include books on popular science, education, history besides reference works.

By far the most momentous assignment is the compiling and editing of the speeches and writings of Mahatma Gandhi both in English and Hindi. Ninety volumes in English, which constitute the main series and eighty volumes in Hindi have been published so far.

The Division has so far brought out over 6,200 books and volumes in Hindi, English and major regional languages of the country. On an average, it publishes about 100 titles every year. The Division has started a new series of low priced books titled "Books for Millions" under which it has released 13 titles so far; of these nine are in Hindi, three in English and one in Punjabi.

The Division publishers 20 journals of varying periodicities. These journals are being published in English, Hindi and ten regional languages. The foremost among these journals is *Employment News* published in English, Hindi and Urdu which commands a paid circulation averaging about 4 lakh copies per week. It seeks to project not only the largest assortment of job vacancies in Central/state government departments/undertakings, private organisations and educational institutions, but also to provide guidance material to enable prospective candidates to prepare for various kinds of tests/interviews. Other important journals are *Yojana*, *Kurukshetra*, *Ajkal* and childrens' monthly *Bal Bharati*.

The books and journals are sold through a network of over 3,600 authorised booksellers and departmental sales emporia located at New Delhi, Bombay, Calcutta, Madras, Patna, Trivandrum, Lucknow and Hyderabad. The sales emporia of the Division also market the publications of 21 other Government and autonomous organisations such as National Museum, Sahitya Akademi, National Book Trust, etc. They also sell and distribute text-books produced by the National Council of Educational Research and Training (NCERT).

The Division instituted the Bhartendu Harishchandra Award Scheme in 1983. Under this scheme, awards are given to encourage original and creative writings in Hindi on various disciplines of mass communication, *viz.*, Print Media, Journalism, All India Radio, etc. For the first year, *i.e.*, 1983 the amount of Award for the first, second and third prizes was Rs 5,000, Rs 4,000 and Rs 3,000 respectively. But recently, the Government has increased the amount of first, second and third prizes to Rs 15,000, Rs 10,000 and Rs 5,000 respectively.

An independent Evaluation Committee which consists of eminent journalists and scholars (mostly non-official) examines the manuscripts/books and decides upon the award winning entries.

During 1987-88, the Publications Division participated in 25 exhibitions and book fairs in India and five exhibitions abroad through National Book Trust. From April to December 1988, it took part in 15 book exhibitions in the country.

AUDIO-VISUAL MEDIA

Feature films are being produced in India since 1912-13. While RG Torney along with NG Chitre made *Pundalik* in 1912, Dhundiraj Govind Phalke (1870-1944) produced *Raja Harishchandra* in 1913. The era of silent films was overtaken by the talkie era in 1931 when Ardeshir Irani (1886-1969) produced *Alam Ara*, though silent movies continued to be produced till 1934. Over the years, about 18,000 feature films have been produced in India which now leads the world in the annual output of feature films.

CENTRAL BOARD OF FILM CERTIFICATION

· Films can be publicly exhibited in India only after they have been certified by the Central Board of Film Certification (CBFC). The Board set up under the Cinematograph Act, 1952, consists of a part-time chairman and minimum of 12 and a maximum of 25 non-official members, all appointed by Government. The Board functions with headquarters at Bombay and six regional offices at Bangalore, Bombay, Calcutta, Hyderabad, Madras and Trivandrum. The regional offices are assisted in the examination of films by Advisory Panels which include eminent educationists, art critics, journalists, social workers, psychologists, etc. The Board examines films for certification in accordance with the provisions contained in Cinematograph Act, 1952, Cinematograph (Certification) Rules 1983 and the guidelines issued by the Central government in this regard. In 1987, the Board certified 806 Indian feature films, 199 foreign feature films, 1,541 Indian short films and 598 foreign short films. During the same period, the Board issued 28 certificates to Indian feature films and 278 to foreign short films, all in video.

There is a Film Certification Appellate Tribunal (FCAT), constituted in March 1984, with headquarters at New Delhi to hear appeals against the decision of the Central Board of Film Certification.

FILMS DIVISION

Films Division is the largest national agency devoted to the production and distribution of documentaries and news magazines. In 1948, just one year after independence, the Films Division was set up to revive the production of newsreels and documentary films. It produces news magazines, documentaries, 16mm feature films for rural audience in regional languages, cartoon films and educational-cum-instructional films for Agriculture, Defence, Family Welfare and for all other departments of the Government of India. On an average, the Division produces 26 news magazines and about 125 documentaries, featurettes and short films every year.

The distribution outlets for these films are: Doordarshan network-both regional and national hook-up; theatrical circuits with about 13,183 cinema theatres having a weekly audience of ten crore and non-theatrical circuits consisting of field publicity units of Central and state governments, other non-theatrical exhibition channels and educational institutions, industrial houses, social and cultural organisations, film societies, etc. It is estimated that about four to five crore rural audience is exposed to these films every week.

The exploitation of the foreign exhibition channels is through the Indian embassies, television network, government departments, educational, cultural and social organisations.

Production of films is managed through in-house directions of the Division. It also involves and associations talent from the open market in quite many a film. During April-December 1988, the Division produced 138 documentary/short films, featurettes and 23 news magazines. The Division also purchased from independent producers three readymade films.

The Films Division releases prints of one documentary film and one news magazine alternately every week for public exhibition through cinema houses. During April-December 1987, Films Division released in theatrical circuit, 27 documentaries, 51 quickies and 20 news magazines. The Division supplied 31,392 prints of documentaries/news magazines and 13,246 prints of family welfare films for theatrical screening. The Division also accepted for release 5,202 prints of 34 documentaries and 43 newsreels produced by different state governments.

The Division has undertaken the production of a serial of 30 episodes on Science *viz., Astronomy—A Journey through the Universe* under the guidance of the eminent scientist, Dr JV Narlikar.

The Division has started production of films for children. Eminent personalities from the film industry have already been associated in the production of some of these films.

The Films Division has continued with the production of one hour rural based featurette films in 16mm in languages of eastern and southern regions of the country including various dialects of the tribal and other backward areas at its two Regional Production Centres at Bangalore and Calcutta. So far, 48 featurettes have been produced. Two featurettes namely "Alokar Abhan" and "Baan" have won national awards as the best regional films.

Bulk of the documentary films are produced through the departmental units of the Division. With a view to encouraging documentary movement in the country, about 40-45 films are produced through independent producers. Apart from this, the Division also purchases some readymade films and receives some of them as donation.

Films Division has a separate unit for making cartoon films including animation sequences for documentaries and news magazines. The newsreel unit of the Division is responsible for producing news magazines which cover important national as well as international events and stories of human interest.

DISTRIBUTION

Films Division undertakes theatrical distribution of documentaries and news magazines through cinema houses in the country which are required to exhibit 'approved films' not exceeding 609.8 metres (2,000 ft) under the compulsory exhibition scheme. Either a documentary film or a news magazine is released every week in 14 Indian languages as well as Hindi and English. Besides distribution under the compulsory exhibition scheme, prints both in film and in video are sold for non-commercial use both in India and abroad.

The branch offices of the Films Division have film libraries of 16mm prints of documentary films and newsreels. During April-December 1987, 5,131 prints were sold and a revenue of Rs 41,82,725 was earned. During the same period, 2,720 prints were supplied to 792 borrowers for film shows. The branch offices also held 75 Press shows in various parts of the country for special invitees.

The Films Division has pursued its novel venture of organising festivals of its films in state capitals to bring the rich treasure it is having, for use of educational institutions in particular and people at large. Six such festivals were organised at Bombay, Calcutta, Lucknow, Madras, Bangalore and Jaipur.

The revenue earned by the Division during April-December 1987 through rentals from cinema houses, sale of prints, stock-shots and waste films, etc., amounted to about Rs 515.50 lakh.

NATIONAL FILM DEVELOPMENT CORPORATION

National Film Development Corporation (NFDC) was set up in April 1980, as a Central agency to promote good cinema in the country. The erstwhile Film Finance Corporation and Indian Motion Pictures Export Corporation were merged in this Corporation. The primary aim of the Corporation is to plan, promote and organise the integrated development of the film industry. The Directorate of Film Festivals, which was a part of the Ministry of Information and Broadcasting, was also transferred to NFDC in July 1981. Production of good cinema is one of the most important objectives of NFDC. The Corporation fulfils this objective by: (a) giving loans for production of feature films and documentaries; (b) cent per cent financing to the projects to be directed by eminent personalities in the field, and (c) co-producing and co-financing films with renowned foreign film producers.

THEATRE FINANCING

The Theatre Financing Scheme was formulated and put into execution by NFDC to ensure creation of additional seating capacity in the country and to provide outlets to good cinema being supported by the NFDC. The Corporation continued its thrust on tie-up of joint financing of theatres with scheduled banks as well as with regional film development corporations.

IMPORT AND DISTRIBUTION OF FOREIGN FILMS

NFDC acts as a canalising agency for import of foreign films into India. The films brought by MPEAA/SOVEXPORTFILM/NRIs and private Indian citizens in the film market are canalised through the Corporation. The NFDC itself imports foreign films and distributes them throughout India.

EXPORT ACTIVITIES

Export of Indian films was the responsibility entrusted to the IMPEC and this work now stands transferred to NFDC. Its direct exports (during April-December 1988) had reached a figure of Rs 117 lakh from Rs 41 lakh.

TECHNICAL SERVICES

The NFDC's sub-titling centre at Vashi, Bombay is the only film sub-titling centre in the country. It provides services to producers, Doordarshan and other private and government agencies. The Centre subtitled a large number of films in French and English for the Festivals of India in France and USA. It has capabilities of subtitling in any language on 35 mm format. The NFDC's Video Centre at Madras is equipped with the latest transfer equipment. The Video Centre transfers films onto video with high broadcast quality. The Film Centre was set up to provide production and post-production facilities on 16 mm and subsequent blowing up to 35 mm to ensure an impetus to the growth of 16 mm culture resulting in cost saving.

RAW STOCK

NFDC is the canalising agency for import and distribution of Cinematograph Film (unexposed) of all types and sizes, excluding black and white positive and sound negative films. NFDC is also the sponsoring agency for film and associated equipment and it monitors the import of various equipment from time to time by different film makers and also recommends concession in customs duty, wherever applicable. More than 50 film makers have availed themselves of this facility and set up various sound/dubbing establishments in various parts of the country.

FILM FESTIVALS

The Directorate of Film Festivals was transferred to NFDC in July 1981 and is entrusted to organise: (a) international film festivals; (b) participation in international film fesitvals abroad; (c) national film festivals; (d) film weeks under cultural exchange, and (e) film section of the Festival of India. It also organises the National Film Festivals and Cultural Weeks every year.

The NFDC introduced a scheme of organising regional film festivals of panorama films to give a fillip to meaningful cimema movement.

NATIONAL FILM CIRCLE

The NFDC has established a National Film Circle at Bombay for the screening of outstanding films, award winning films, films from the National Archive collections, films of Great Directors and Great Masters, both Indian and foreign. There is paid membership for this Circle. The intention is to spread the growth of good cinema movement through the NFC concept to other important centres in the country.

FILM MAGAZINE

The Corporation has started *Cinema in India* as an analytical and meaningful film magazine.

NATIONAL FILM ARCHIVE OF INDIA

The National Film Archive of India was established in February 1964 to acquire and preserve the heritage of national cinema and the best of world cinema; to classify, document data relating to cinema and encourage film study, film research and dissemination of film culture. Archive's collection has over 10,705 films, 16,611 books, 214 periodicals, 64,747 stills, 15,723 scripts, 29,916 press clippings, 5,421 wall posters, 6,401 pamphlets/folders, 3,753 song booklets, 1,819 disc records, 64 video cassettes, 55 audio tapes, 1,951 micro films and 123 slides. Notable among its acquisitions are several silent and talkie films of the early days of cinema in India and abroad, as well as recent award winning Indian and foreign films.

The Archive holds regular screenings of film classics, conducts short courses in Film Appreciation at Pune and other centres for the promotion of healthy film culture. Photographic exhibition on the evolution of Indian Cinema, film festivals/retrospectives of film pioneers are organised by the Archive in collaboration with CFSI, Directorate of Film Festivals and University Film Study Centres. The Archive also maintains tape records of interviews with film pioneers towards building up an oral history of Indian Cinema.

The Archive maintains a distribution library of over 120 classic Indian and foreign films for the benefit of the film societies and film study groups in different parts of the country for non-commercial study screenings. The majority of films in the Archive collection can be used for study screening within the Archive premises and for special screenings arranged by the Archive outside.

NFAI has been organising regular courses in film appreciation at Pune and other centres to create greater awareness among the general public on the importance of cinema as a medium of art and communication. Apart from the five-week full time annual course at Pune, the Archive organises/assists in conducting four to five courses of short duration in various parts of the country

NFAI as a member of the International Federation of Film Archives, collaborates with UNESCO for organising regional seminars and workshop for development of film archives in Asian region and building up a computerised data base for film and television productions in the Asia Pacific region.

With headquarters at Pune, the Archive has at present three regional offices at Bangalore, Calcutta and Trivandrum.

CHILDREN'S FILM SOCIETY, INDIA

The Children's Film Society, India (CFSI) was established in 1955 as an autonomous body with the objective of promoting and encouraging the Children's Film Movement in the country. The aim is to provide the children and the young people, films with clean and healthy entertainment. With this motto, the organisation is engaged in production, acquisition, distribution and exhibition of the films suitable for the children and young people. Since its inception, the Society has produced and purchased nearly 88 feature films and 151 short films.

During 1988-89, week-long film festivals were organised in several districts in collaboration with the district authorities and other welfare organisations.

A pilot project to reach the rural children in Maharashtra through a mobile film unit is in operation and during 1987-88, 131 such shows were organised in three districts covering an audience of 36,228 and also contributing a sum of Rs 30, 228 to the CFSI resources. CFSI films are seen by 14.38 lakh audience and the Society earned a revenue of Rs 17.45 lakh during the year 1987-88.

The Society has reoriented its distribution pattern and launched a new programme to carry cinema to rural and urban areas to involve greater participation of younger generation in Children Film Movement. The production modality has also been revised by introducing a three-tier programme to encourage talent and to promote better professionalism in the field of children's film production.

The Society organises festivals in India and participates in important International Film Festivals abroad. In India, the first International Children's Film Festival was arranged in Bombay in 1979, second in Madras in 1981, third in Calcutta in November 1983, fourth in Bangalore in November 1985, and the fifth in Cuttack/ Bhubaneshwar in November 1987. In the latest festival around 100 representative films from 24 countries participated in different sections. The Indian entry *Swamy* bagged the Golden Elephant award. The sixth festival will be held in New Delhi in November 1989.

WELFARE OF CINE-WORKERS

The Parliament had passed three Acts in 1981 for the amelioration of the lot of the cine-workers. These are: (i) Cine-Workers Welfare Cess Act, (ii) Cine-Workers and Cinema Theatre Workers (Regulation of Employment) Act and (iii) Cine-Workers Welfare Fund Act. All of these came into force in 1984 when the rules under the respective Acts were framed and notified. Under the Cine-Workers Welfare Cess Act, 1981 and the Rules framed thereunder, a cess of Rs 1,000 per feature film is collected from the producer for each feature film certified by the Central Board of Film Certification. This forms the core of the Cine-Workers Welfare Fund. The Cine-Workers Welfare Fund Act, 1981 *inter alia* aims at the welfare of the weaker sections of cine-workers by providing for dispensaries. maternity centres and educational and recreational facilities, etc., by film producers/film studios and sanction of grants-in-aid from the welfare fund. The benefit of different schemes under 'Education' and 'Health' had since been extended during the year 1986-87 by the Ministry of Labour to which the work relating to the administration of these Acts has been transferred from 1 April 1986.

PROJECTION OF FREEDOM MOVEMENT

Ministry of Information and Broadcasting launched a multi-media programme in 1984 to project India's freedom movement through documentary films, radio and TV programmes, press, field publicity, advertisements, books and journals. A major part of the project is the production of special documentary films on the subjects by the Films Division. The release of these films started from 15 August 1984 and it still continues. So far, Films Division has produced 45 films under the project.

Films Division has also undertaken production of films on "Contribution of States/Union Territories to the Freedom Movement". At present,there are nine films under production.

ADVERTISING AND VISUAL PUBLICITY

Directorate of Advertising and Visual Publicity (DAVP) is the Central agency of the Government for publicising the policies, programmes and performances of various ministries (except Railways), departments and autonomous bodies through the widest range of communication media such as press advertising; printed publicity material like posters, folders, brochures, booklets, wall hangers, etc., outdoor publicity items like hoardings, kiosks, cinema slides, wall paintings and transit advertising on buses, tramcars and railway coaches; audio-visual media such as radio and television commercials, short advertisement films and photographic exhibitions. It is one of the biggest advertising agencies in the country using nearly 3,000 newspapers and periodicals for press advertising. The Directorate has 40 field exhibition units spread all over the country including seven mobile vans and two exhibition rail coach units. Its exhibitions are designed and fabricated for display all over the country. It has one of the largest direct mail services and can readily reach nearly 15.50 lakh addresses all over the country.

MULTI-MEDIA PUBLICITY

Multi-media publicity campaigns are launched by the Directorate to inform and educate the people on matters of immediate and long-term interest as well as to motivate them to participate in the national programmes for development. During 1987-88, major publicity campaigns were organised on important socio-economic themes such as the health and family welfare, agriculture and rural development, 20-Point Programme-1986, national integration and communal harmony, upliftment of the weaker sections of the society and removal of anti-social and anti-national evils like evasion of income tax, excise and customs duties, smuggling, dowry, untouchability, drug-addiction and terrorist and extremist activities. Other campaigns of the DAVP were aimed to motivate the people against terrorist activities as well as to counter the anti-national propaganda by the agitationists in certain parts of the country. A vigorous publicity campaign was undertaken to foster the spirit of secularism and national unity in the country especially through the media of Radio and TV commercials, printed material, exhibitions and outdoor media like wall paintings, cinema slides and hoardings.

A special campaign was launched to highlight the achievements of the country in different fields on the occasion of 40 years of independence. A prestigious exhibition entitled '40 Years of Independence' was put up for display at several places in the country attracting large crowds. Informative press advertisements highlighting the achievements of the country in the last four decades were released to newspapers/periodicals all over the country on 'Independence Day 1987' and 'Constitution Day 1988'. Special efforts were made to publicise the family welfare programmes of the Government and the message of 'Health for All'. Publicity campaigns for the control of diseases like TB, STD, AIDS, Leprosy, Diarrhoea and Malaria were further intensified. Different media of publicity were used to highlight the salient features of the several savings schemes launched by the National Savings Organisation for Small and Big Savers. Extensive publicity was undertaken on behalf of the Ministry of Defence to motivate the youth of the country, including doctors, engineers and other professionals to join different wings of the Armed Forces. A beautifully illustrated brochure entitled 'The Ultimate Challenges' was brought out for distribution amongst the engineering graduates.

EXHIBITIONS

The Directorate organised 600 exhibitions throughout the country during 1987-88, specially in rural and remote areas, prominent fairs, festivals, congregations, social and religious meets. These exhibitions were visited by over 1.25 crore people. The major thrust of the exhibitions was to promote national integration and communal harmony; family welfare; to project the aims, objectives and achivements of the 20-Point Programme-1986, and the all round development of the country during the last 40 years of independence. The titles under which these exhibitions were organised were, *Ek Rashtra Ek Pran*, *The Turning Point* and *40 Years of Independence*. DAVP participated in the Festival of India held in USSR with the prestigious exhibition titled *Indian Youth Marches Ahead*. This exhibition was displayed at Moscow, Leningrad and Tashkent and was highly appreciated by the media and the visitors. DAVP also assisted the Soviet team from Moscow in organising 'The Soviet Youth' exhibition in India. As a part of the Birth Centenary celebrations of Pt Govind Ballabh Pant, an exhibition on the life and works of this great national leader titled *Bharat Ratna—Pt Govind Ballabh Pant* was produced by DAVP for exposition throughout the country.

ADVERTISEMENTS

DAVP releases annually around 16,000 to 17,000 advertisements to various newspapers and journals on behalf of various ministries (except Railways) and departments of the Government of India. A large number of autonomous bodies and public sector undertakings also channelise their advertisements through DAVP. A balanced and an equitable placing of advertisements is aimed at, keeping in view the advertising policy of the Government, publicity requirements and the availability of funds. DAVP maintains a panel of newspapers in almost all the Indian languages for release of government advertisements. Presently, about 3,000 publications are on DAVP's panel. An annual rate contract is entered with the individual newspapers for release of press advertisements. There is a separate list of newspapers to which the UPSC advertisements are released. This list also contains newspapers in almost all the Indian languages. The revised advertising policy effective from October 1980, with modifications made in 1981-82 continued to be followed during the year 1987-88.

PRINTED PUBLICITY

DAVP brings out publicity literature in English, Hindi and 11 regional languages namely Assamese, Bengali, Gujarati, Kannada, Malayalam, Marathi, Oriya, Punjabi, Tamil, Telugu and Urdu. During the period April 1987 to March 1988, over 1.60 crore copies of printed publicity items were produced for free distribution. Some of the important booklets/brochures/folders brought out during the year include 'What the Budget 1987-88 Can Do for You', 'Ramanujan—The Genius of this Century', 'Chaitanya Mahaprabhu', 'Subramania Bharati', 'National Education Policy', 'Facts about our Diet' and 'Self-Employment for Educated Unemployed'.

MASS MAILING

The Mass Mailing Wing of the Directorate distributed 1.48 crore items of printed publicity material during 1987-88. Distribution was done from the headquarters at New Delhi and regional distribution centres at Bombay, Calcutta and Madras, either through direct mail to individuals/institutions or by bulk supply to organisations for further distribution in their respective areas. The mailing library of DAVP consists of 15.68 lakh direct mail address spread over 500 categories, including rural categories like primary/middle schools, panchayats, post offices, block development offices, rural bank branches and cooperative societies.

OTHER MEDIA OF PUBLICITY

Publicity for various campaigns is also carried out through the commercial channels of All India Radio and Doordarshan as well as outdoor media like wall-paintings, hoardings, cinema slides, kiosks, bus/train/tramcar panels, tin stencils, banners and stickers, etc. Till December 1988, DAVP put out as many as 1,703 Radio spots, jingles and sponsored programmes in 12 languages and arranged for a total of 50,000 broadcasts on different themes. In addition to the above, 229 video spots/video quickies and other motivational programmes covering subjects of national importance were produced in various languages for telecast over the commercial channels of Doordarshan as well as to meet the publicity needs of the client departments/ministries.

FIELD PUBLICITY

Directorate of Field Publicity is the largest rural-oriented inter-personal communication medium in the country which seeks to project the policies and programmes of the Government by bringing its men and material face-to-face with the people. It endeavours to inform them of the decisions taken and the plans formulated for their benefit. The field publicity personnel work in widely diverse areas. On an average, one field publicity unit has to cover nearly 27 lakh people living in 2,308 villages spread over an area of 11,600 sq kms.

The basic objectives of DFP are to secure involvement of people in development programmes, to foster national cohesion and communal harmony and to facilitate smooth transformation especially in backward, remote and tribal areas. The Directorate is a two-way channel of communication. While, on the one hand, it disseminates information and motivates people, on the other it gathers spontaneous feedback on the basis of face-to-face communication and transmits this to the concerned ministries and other media units in the form of "public reaction reports", "special situation reports" and "success stories". The units seek to achieve the basic objectives of development, transformation through skillful synthesis between the traditional and modern forms of communication and judicious use of various media techniques like films, song and drama programmes, photo exhibitions, display and distribution of print material, conducted tours of opinion leaders, public meetings, group discussions, seminars, symposia, debates, essay competitions, etc. Apart from certain basic policies of the Government, the field units also conduct publicity compaigns on themes like national integration, communal harmony, health and family welfare, new 20-Point Programme, role of public sector and socio-economic programmes like Prime Minister's 15-Point Programme, evil of dowry, untouchability, prohibition, status of women, etc. The DFP units also cover suitably important occasions, national events, fairs and festivals.

The Directorate functions at three levels viz., (a) headquarters in New Delhi; (b) regional offices at state capitals/important cities/towns, and (c) field publicity units at state capitals/district headquarters/important centrally located towns. For administrative convenience, some small states and union territories have been grouped together to form one region in some cases while some larger and highly populated states have been divided into two regions for efficient functioning. The present network of the Directorate is 22 regional offices and 257 field publicity units. Of these, 72 concentrate their activities in the border areas and 30 carry out intensive publicity on family welfare in the areas where population growth rate is comparatively high.

During the year 1987, DFP units organised 71,670 film shows, 8,775 song and drama programmes, 96,399 oral communication programmes and 42,715 photo exhibitions for the benefit of 7.64 crore people belonging to different segments of the society.

SONG AND DRAMA DIVISION

Song and Drama Division is the live media wing of the Ministry of Information and Broadcasting. Established in 1954, it utilises the traditional, folk and contemporary stage forms like puppets, plays, dance-dramas, ballets, ballads, *harikathas* for the purpose of social communication projecting the developmental activities in the country. It has the advantage of an instant rapport with the people and the flexibility to incorporate new ideas and convictions.

The Division has 43 departmental troupes including the Central Drama Troupe. Besides, it has about 580 registered parties consisting of eminent performers in various performing arts all over the country to organise programmes of national importance.

The Light and Sound Wing of the Division was established in 1976 at Delhi and the second unit at Bangalore during 1980-81. The programme of the wing is an art of theatre panosonic which has proved very successful because more than 10,000 spectators can witness a performance without any loss of audio or visual quality of the performance at a time. It has presented programmes on eminent persons like Guru Nanak Dev, Subramania Bharati, Bahadur Shah Zafar and modern themes like *Sehar Hogi* on Family Welfare.

Also Sound and Light programmes on Begum Hazrat Mahal, *Bharat Ratna Indira Maa* on the life and times of Indira Gandhi and *Azadi Ki Pehli Jang* were also presented.

The Division set up a tribal Centre at Ranchi during 1981 covering Madhya Pradesh, Bihar and Orissa in order to bring the tribals of these states into the national mainstream.

Its Armed Forces Entertainment Wing was established in 1967 with a view to entertaining jawans posted in forward areas. In connection with commemoration of the 40th Anniversary of India's Independence, Pandit Jawaharlal Nehru and Pandit Govind Ballabh Pant Centenaries, Armed Forces Entertainment Wing presented two dance-dramas entitled *Nehru ke Sapne Aur Azadi ke Chalis Saal* and *Parvat Putra.* Besides special programmes on Pandit Nehru's Dream (Marathi), Guards of Freedom (Tamil), Our Freedom (Telegu) and *Mukti Sangram Aur Amar Sankalp* (Hindi) were also presented.

Border Publicity troupes stationed at international boundaries of the country perform for village folk living in remote corners of the country.

TRAINING

Training in mass communication is available in a number of institutions in the country. There are twenty five universities which offer degree/diploma/ certificate courses in this field.

STAFF TRAINING INSTITUTE (PROGRAMME)

Staff Training Institute (Programme) of All India Radio, New Delhi imparts training to in-service programme and administration personnel of All India Radio and guest trainees from foreign broadcasting organisations in the planning and production of programmes and administration. The trainees are usually sponsored under the Colombo Plan, Special Commonwealth African Assistance Plan (SCAAP) and cultural exchange programmes. Special efforts are made to train programmers in the planning, production and management techniques. The Institute has two regional training centres, one at Hyderabad and the other at Shillong. Four more regional training centres at Lucknow, Ahamadabad, Cuttack and Trivandrum are being started shortly.

STAFF TRAINING INSTITUTE (TECHNICAL)

Staff Training Institute (Technical) has the responsibility of imparting in-service training to the engineers of AIR and Doordarshan networks. The Institute conducts basic induction courses for the new entrants and also arranges refresher courses and specialised task/equipment oriented courses for various categories of staff to keep the staff abreast with the up-to-date technology inducted into AIR and Doordarshan networks. During the year, a Career Development Course for Senior Engineering Assistants was also conducted. Trainees from several countries are accommodated in the above courses under SCAAP, ITEC, Colombo Plan and other technical cooperation schemes. During 1988, about 600 engineering staff were trained in 29 different courses. The training was also arranged for broadcast engineering staff from Bhutan and Mauritius. A few engineering officers were sent to Administrative Staff College of India, Hyderabad, for specialised training. An in-country course on "Training for Trainers" was also conducted by this Institute in collaboration with Asia Pacific Institute for Broadcasting Development, Kuala Lumpur.

FILM AND TV INSTITUTE OF INDIA

Film and TV Institute of India (FTII) was set up at Pune in 1960 for training the art and craft of film making on the recommendations of Film Enquiry Committee. Training in television started in 1971 in Delhi and was introduced in FTII when it became an autonomous body in October 1974.

The film wing of the Institute offers three-year specialisation courses in (1) Film Direction, (2) Motion Picture Photography, (3) Sound Recording and Sound Engineering, with one year common course and (4) a two-year specialisation course in Film Editing with one year common course. The Television Wing offers in-service training for the employees of Doordarshan.

A one-month course in Film Appreciation conducted in collaboration with National Film Archive of India, is a regular annual feature of the Institute.

INDIAN INSTITUTE OF MASS COMMUNICATION

Indian Institute of Mass Communication (IIMC) was set up in August 1965 as a centre for advanced study in mass communication Registered under the Indian Societies Registration Act, it is an autonomous body deriving funds from the Government of India through the Ministry of Information and Broadcasting It is managed by a Society which is reconstituted every two years

The Institute conducts two regular training courses and four regular diploma courses They are (1) Orientation course for officers of the Indian Information Service, (2) Broadcast Journalism course for personnel of AIR and Doordarshan, (3) Post-graduate Diploma course in Journalism, (4) Post-graduate Diploma course in Advertising and Public Relations, (5) Post-graduate Diploma course in Journalism (Hindi) and (6) Diploma course in News Agency Journalism for Non-Aligned countries In addition to the Indian students, candidates sponsored under various Government of India technical assistance schemes are also admitted to the post-graduate diploma course in Journalism The diploma course in News Agency Journalism is essentially for working journalists from Non-Aligned countries, but nominees of the two national news agencies are also admitted to this course

In addition, the Institute conducts a number of short-term courses in areas of special interest including Hindi journalism

The Institute has a well-equipped library and documentation unit Audio-visual facilities have been developed to meet specific training needs A laboratory press caters to the training and publication needs of the Institute The Institute brings out a quarterly journal, *Communicator* in English and *Sanchar Madhyam* in Hindi, besides other publications

The Research and Evaluation Departments contribute towards the understanding of the communication process, its practices, and their wider social, economic and political implications within the Indian context

ADVISORY COMMITTEE

An Advisory Committee was constituted by the Government in November 1980 to make recommendations from time to time regarding the restructuring of the various media organisations under the Ministry of Information and Broadcasting and also how best they could function in a more professional and efficient manner

The terms of reference of the Media Advisory Committee are to advise the Government on (a) structural changes in different media organisations, under the Ministry and, if necessary, in the Ministry itself to bring about greater professional efficiency and improvement in the quality of performance of the media in response to wide ranging national requirements and aspirations, (b) measures to be taken at the national, state, regional and local levels to associate the people more directly in the planning and initiation of innovative programmes in different media organs under the jurisdiction of the Ministry, through creative participation and inter-communication so as to enrich their cultural identity and promote national integration; (c) determining priorities in different areas of media development and providing adequate infrastructural support and strengthening the capacity of the media to reach out to all sections of the people, and (d) the mode and mechanics of coordination amongst various media groups under the Ministry and of cooperation between the Central and state media organisations with a view to maximising the impact of the communication support for development efforts.

Major recommendations made by the Committee are grant of pension to staff artists of AIR and Doordarshan; news policy for broadcast media; introduction of colour TV in the country; publishing policy of the Publications Division; External Services Division of AIR and preparation of Software Plan for Doordarshan as recommended by the Working Group headed by PC Joshi.

The Government has already accepted in a modified form the recommendations pertaining to grant of pension to staff artists of AIR and Doordarshan. The recommendations on news policy for broadcast media have also been accepted and detailed guidelines on this basis issued to AIR and Doordarshan. Proposals for the introduction of colour TV formulated by the Ministry took into account the recommendations of the Advisory Committee. Most of the recommendations on the publishing activities of the Publications Division have been accepted. The Advisory Committee's recommendations on the External Services Division of All India Radio and on the report of the Working Group on a Software Plan for Doordarshan have also been taken into consideration.

12 Basic Economic Data

INDIA is rich in natural resources and manpower. These resources have, however, not been exploited fully and are capable of greater utilisation. Indian economy is still predominantly agricultural. About one-third of the country's national income is derived from agriculture and allied activities which absorb about two-third of the working force. Since 1947, the aim has been to diversify the economy.

NATIONAL AND PER CAPITA INCOMES

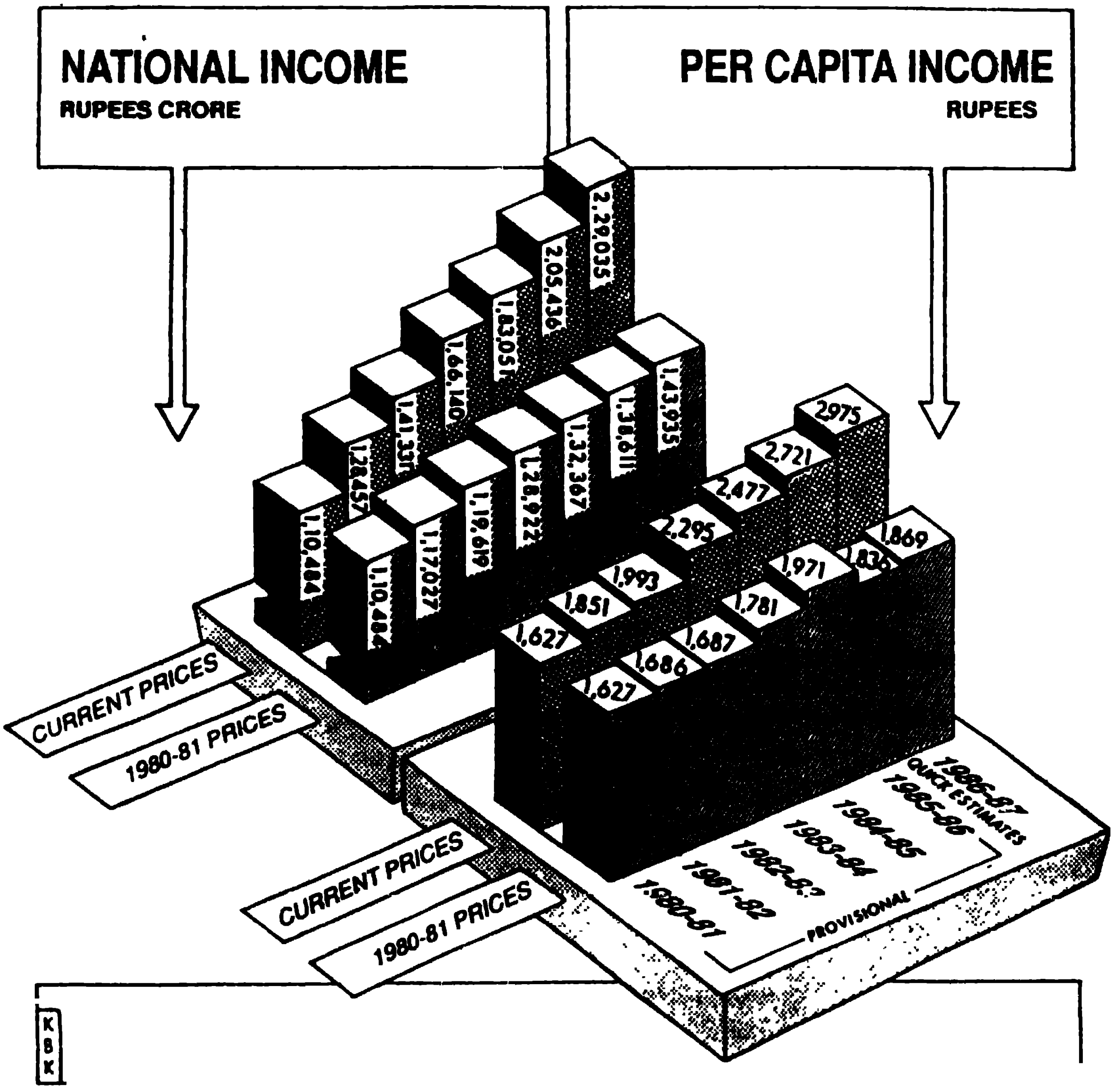
National income is defined as the sum of incomes accruing to the factors of production supplied by normal residents of the country before deduction of direct taxes. It is identically equal to net national product at factor cost. Table 12.1 gives estimates of national and per capita incomes at current and 1980-81 prices. Table 12.2 gives national product and related aggregates at current prices. Table 12.3 gives the performance of public sector. Table 12.4 gives the private final consumption expenditure, net domestic saving and capital formation since 1980-81.

CATEGORIES OF WORKERS

For the 1981 census, the population was divided into main workers (classified into four broad industrial categories), marginal workers and non-workers (figures of only these broad groups are available). In the 1971 census, the population was divided into workers and non-workers. There were nine categories of workers, which are shown in table 12.5. It shows the number of workers and non-workers in rural and urban areas, as on 1 March 1981 as compared to those on 1 April 1971. Employment in the organised sector has been shown in table 12.6.

UNEMPLOYMENT

The number of persons on the live register of employment exchanges gives an idea of the trend of unemployment subject to certain limitations. Employment exchanges cover mainly urban areas. Registration with the employment exchanges being voluntary, not all the unemployed register their names in the exchanges. Further, some of the registrants are already employed but have registered for seeking better employment. The number of job-seekers on the live registers of employment exchanges increased from 34.24 lakh as on 31 December 1969 to 178.38 lakh as on 31 December 1981, 197.53 lakh as on 31 December 1982, 219.53 lakh as on 31 December 1983 and 262.70 lakh as on 31 December 1985. Table 12.7 gives the occupational distribution of registrants with the employment exchanges as on 31 December 1985.


NATIONAL INCOME
RUPEES CRORE
PER CAPITA INCOME
RUPEES
1,10,484
1,28,457
1,41,331
1,66,140
1,83,051
2,05,436
2,29,035
1,10,484
1,17,027
1,19,619
1,28,922
1,32,367
1,38,611
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1,627
1,851
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2,295
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2975
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1,687
1,781
1,971
1,836
1,869
CURRENT PRICES
1980-81 PRICES
CURRENT PRICES
1980-81 PRICES
1980-81
1981-82
1982-83
1983-84
1984-85
1985-86
1986-87
QUICK ESTIMATES
PROVISIONAL
KBK

TABLE 12.1 NATIONAL AND PER CAPITA INCOME AT FACTOR COST

Item	1980-81[1]	1981-82[1]	1982-83[1]	1983-84[1]	1984-85[1]	1985-86[1]	1986-87[2]
Net national product at factor cost (Rs crore)							
at current prices	1,10,484	1,28,457	1,41,331	1,66,140	1,83,051	2,05,436	2,29,035
at 1980-81 prices	1,10,484	1,17,027	1,19,619	1,28,922	1,32,367	1,38,611	1,43,935
Per capita net national product (Rupees)							
at current prices	1,627.2	1,851.0	1,993.4	2,294.8	2,477.0	2,721.0	2,974.5
at 1980-81 prices	1.627.2	1,686.2	1,687.2	1,780.7	1,791.2	1,835.9	1,869.3
Index number of net national product with 1980-81 as base							
at current prices	100.0	116.3	127.9	150.4	165.7	185.9	207.3
at 1980-81 prices	100.0	105.9	108.3	116.7	119.8	125.5	130.3
Index number of per capita net national product with 1980-81 as base							
at current prices	100.0	113.8	122.5	141.0	152.2	167.2	182.8
at 1980-81 prices	100.0	103.6	103.7	109.4	110.1	112.8	114.9
Gross national product at factor cost (Rs crore)							
at current prices	1,22,571	1,42,916	1,58,217	1,85,462	2,05,308	2,31,876	2,59,155
at 1980-81 prices	1,22,571	1,29,815	1,33,214	1,43,418	1,47,816	1,55,000	1,61,298
Index number of gross national product with 1980-81 as base							
at current prices	100.0	116.6	129.1	151.3	167.5	189.2	211.4
at 1980-81 prices	100.0	105.9	108.7	117.0	120.6	126.5	131.6

1. Provisional estimates
2. Quick estimates

TABLE 12.2 NATIONAL PRODUCT AND RELATED AGGREGATES
(at current prices)

(Rs crore)

Item	1980-81[1]	1981-82[1]	1982-83[1]	1983-84[1]	1984-85[1]	1985-86[1]	1986-87[2]
(a) Gross national product at factor cost	1,22,571	1,42,916	1,58,217	1,85,462	2,05,308	2,31,754	2,59,032
(b) Add indirect taxes less subsidies	13,586	16,544	18,737	20,866	22,810	28,428	32,203
(c) Gross national product at market prices (a + b)	1,36,157	1,59,460	1,76,954	2,06,328	2,28,118	2,60,182	2,91,235
(d) Less consumption of fixed capital	12,087	14,459	16,886	19,332	22,257	26,440	30,120
(e) Net national product at market prices (c-d)	1,24,070	1,45,001	1,60,068	1,87,006	2,05,861	2,33,742	2,61,115
(f) Less net factor income from abroad	(+)345	(+)40	(-)634	(-)944	(-)1,424	(-)1,429	(-)1,429
(g) Net domestic product at market prices (e-b)	1,23,725	1,44,961	1,60,702	1,87,950	2,07,285	2,35,171	2,62,544
(h) Net domestic product at factor cost	1,10,139	1,28,417	1,41,965	1,67,084	1,84,475	2,06,865	2,30,464
(i) Less income from entrepreneurship and property accruing to government administrative departments	554	687	1,425	1,153	1,936	2,451	4,722
(j) Less saving of non-departmental enterprises	(-)820	(-)46	504	484	1,023	1,003	1,256
(k) Income from domestic product accruing to private sector (h-i-j)	1,10,405	1,27,776	1,40,036	1,65,447	1,81,516	2,03,411	2,24,486
(l) Add national debt interest	1,524	1,911	2,713	3,739	5,008	6,123	8,133
(m) Add net factor income from abroad	(+)345	(+)40	(-)634	(-)944	(-)1,424	(-)1,429	(-)1,429

Table 12.2 (Continued)

(Rs crore)

Item	1980-81[1]	1981-82[1]	1982-83[1]	1983-84[1]	1984-85[1]	1985-86[1]	1986-87[2]
(n) Add current transfers from the government administrative departments	2,835	3,370	4,008	4,640	5,733	6,840	8,461
(o) Add other current transfers from the rest of the world (net)	2,257	2,221	2,527	2.774	3,101	2,821	2,700
(p) Private income (k+l+m+n+o)	1,17,366	1,35,318	1,48,650	1,75,656	1,93.934	2,17,766	2,42,351
(q) Less saving of private corporate sector, net of retained earnings of foreign companies	584	495	568	407	822	1,303	881
(r) Less corporation tax	1,378	1,970	2,185	2,493	2,556	2,865	3,330
(s) Personal income (p-q-r)	1,15,404	1,32,853	1,45,897	1,72,756	1,90,556	2,13,598	2,38,140
(t) Less direct taxes paid by households	2,197	2,491	2,650	2,862	3,250	3,679	3,911
(u) Less miscellaneous receipts of government administrative departments	303	389	479	506	900	1,246	1,075
(v) Personal disposable income (s-t-u)	1,12,904	1,29,973	1,42,768	1,69,388	1,86,406	2,08,673	2,33,154

Note: Available data does not permit separation of fees, fines, etc., paid by producers and to that extent personal disposable income is under estimate

1. Provisional
2. Quick estimates

TABLE 12.3 PERFORMANCE OF PUBLIC SECTOR

(at current prices)

(Rs crore)

Item	1980-81[1]	1981-82[1]	1982-83[1]	1983-84[1]	1984-85[1]	1985-86[1]	1986-87[2]
Gross domestic product	1,22,226	1,42,876	1,58,851	1,86,406	2,06,732	2,33,305	2,60,584
Public	24,171	29,857	36,240	42,139	49,132	58,196	68,658
Private	98,055	1,13,019	1,22,611	1,44,267	1,57,600	1,75,109	1,91,926
Share of public to total (per cent)	19.8	20.9	22.8	22.6	23.8	24.9	26.3
Gross domestic saving	28,773	33,668	34,670	41,023	44,838	57,630	63,413
Public	4,654	7,254	7,822	6,775	6,586	8,125	7,536
Private	24,119	26,414	26,848	34,248	38,252	49,505	55,877
Share of public to total (per cent)	16.2	21.5	22.6	16.5	14.7	14.1	11.9
Gross domestic capital (formation)[3]	32,929	41,572	41,563	48,178	54,295	68,117	71,857
Public[4]	14,000	17,656	20,219	21,713	26,235	30,553	34,123
Private[4]	18,929	23,916	21,344	26,465	28,060	37,624	37,734
Share of public to total (per cent)	42.5	42.5	48.6	45.1	48.3	44.8	47.5
Final consumption expenditure	1,12,167	1,28,914	1,43,728	1,66,754	1,84,666	2,03,640	2,31,523
Public Administration	13,084	15,355	18,272	21,141	24,352	29,261	34,923
Private households and non-profit institutions	99,083	1,13,559	1,25,456	1,45,613	1,60,314	1,74,379	1,96,600
Share of public to total (per cent)	11.7	11.9	12.7	12.7	13.2	14.4	15.1

1. Provisional estimates
2. Quick estimates
3. Unadjusted for errors and ommissions
4. Including net purchase of second-hand physical assets.

TABLE 12.4 PRIVATE CONSUMPTION, SAVING AND CAPITAL FORMATION

Year	Private final consumption expenditure in domestic market (Rs crore)		Per capita private final consumption expenditure in domestic market (Rs crore)		Net domestic saving (Rs crore)	Rate of saving[1] (per cent)	Net domestic capital formation (Rs crore)		Rate of capital formation (per cent)
	at current prices	at 1980-81 prices	at current prices	at 1980-81 prices	at current prices	at current prices	at current prices	at 1980-81 prices	at current prices
1980-81[2]	99,083	99,083	1,459	1,459	16,686	13.5	18,780	18,780	15.2
1981-82[2]	1,13,559	1,03,964	1,636	1,498	19,209	13.3	21,820	19,574	15.1
1982-83[2]	1,25,456	1,07,505	1,769	1,516	17,784	11.1	20,350	17,214	12.7
1983-84[2]	1,45,613	1,14,670	2,011	1,584	21,701	11.5	24,218	17,676	12.9
1984-85[2]	1,60,324	1,18,190	2,169	1,599	22,581	10.9	25,873	17,425	12.5
1985-86[2]	1,74,379	1,20,844	2,310	1,601	31,190	13.3	37,424	23,576	15.9
1986-87[3]	1,96,600	1,27,806	2,553	1,660	33,293	12.7	38,388	22,420	14.6

1. Per cent of net domestic product at market prices
2. Provisional estimates
3. Quick estimates

TABLE 12.5 POPULATION BY CATEGORIES OF WORKERS AND NON-WORKERS

(In crore)

	Rural	Urban	Total
1981 Census			
Total Population[1]	52.55	15.97	68 52
	(43.91)	(10.91)	(54.82)
Total marginal[2]	2.09	0.12	2.21
Total workers[2]	17.64[3]	4.61[3]	22.25[3]
	(14.85)	(3.20)	(18.05)
(i) Cultivators	9.02	0 23	9.25
	(7.66)	(0.17)	(7.83)
(ii) Agricultural labourers	5.27	0 28	5.55
	(4.56)	(0.19)	(4.75)
(iii) Livestock, forestry and fishery	0.42	0.08	0.50
	(0.38)	(0.05)	(0.43)
(iv) Mining and quarrying	0.08	0.05	0.13
	(0.06)	(0.03)	(0.09)
(v) Manufacturing and processing	1.15	1.36	2.51
	(0.82)	(0 89)	(1.71)
(vi) Construction	0.18	0.19	0.37
	(0.11)	(0.11)	(0.22)
(vii) Trade and commerce	0.49	0.92	1.41
	(0.36)	(0 64)	(1.00)
(viii) Transport, storage	0.19	0 42	0.61
and communication	0.12	(0.32)	0.44
(ix) Other services	0.84	1.07	1.91
	(0.78)	(0.90)	(1 58)
Non-workers[2]	31.03	11.04	42.07
	(29.06)	(7.71)	(36.77)

Includes the projected population of Assam, where the census was not held in 1981 owing to disturbed conditions and excludes that portion of Jammu and Kashmir which is under the illegal occupation of Pakistan and China.

Excludes Assam and that portion of Jammu and Kashmir which is under the illegal occupation of China and Pakistan.

Relates to the main workers of the 1981 census which are comparable with the total workers of the 1971 census. In the 1981 census, workers were classified into main workers and marginal workers and non-workers.

Figures in parenthesis relate to the 1971 census.

TABLE 12.6 EMPLOYMENT IN ORGANISED SECTOR

(In lakh)

	March 1976[1]	March 1977	March 1978	March 1979	March 1980	March 1981	March 1982	March 1983	March 1984	March 1985	March 1986	March 1987[2]
Public Sector												
Central Government	30.47	30.82	30.96	31.34	31.78	31.95	32.49	32.66	33.11	33.29	33.46	33.45
State Government	48.97	50.20	51.60	53.09	54.78	56.76	58.53	60.38	61.54	62.80	64.73	66.56
Quasi-Government	33.92	36.75	39.29	41.70	43.43	45.76	48.12	50.40	52.74	54.97	56.74	57.91
Local Bodies	19.85	19.89	20.15	20.63	20.80	20.37	20.33	21.11	21.30	21.64	21.90	22.00
Total:	133.22	137.66	142.00	146.76	150.78	154.84	159.46	164.56	168.69	172.69	176.83	179.94
Private Sector (non-agricultural)												
Larger establishments (employing 25 or more workers)	61.13	61.37	63.22	64.65	64.84	66.00	67.33	67.29	65.26	64.79	65.47	65.34
Smaller establishments (employing 10 to 24 workers)	7.31	7.30	7.21	7.42	7.43	7.95	8.14	8.24	8.19	8.31	8.25	8.30
Total:	68.44	68.67	70.43	72.08	72.27	73.95	75.47	75.52	73.45	73.09	73.73	73.64
Grand Total:	201.65	206.34	212.43	218.84	223.05	228.79	234.93	240.08	242.14	245.78	250.56	253.57

1. Data for Manipur is not included in March 1976.
2. Provisional

Note: In some cases, the totals may not tally due to rounding off.

TABLE 12.7 APPLICANTS ON THE LIVE REGISTER OF EMPLOYMENT EXCHANGES

Occupational Groups	Number as on 31 December 1985 ('000)	Percentage to total
Professional, technical and related workers	1,215.2	4.63
Administrative, executive and managerial workers	8.8	0.03
Clerical and related workers	1,198.2	4.56
Sales workers	5.6	0.02
Farmers, fishermen, hunters, lodgers and related workers	76.8	0.29
Service workers	532.9	2.03
Production and related workers, transport, equipment operators and labourers	2,065.9	7.87
Workers not classified by occupation:		
(a) Below matric including illiterates	9,360.8	35.63
(b) Matric and above but below graduates	9,940.4	37.84
(c) Graduates and above	1,865.4	7.10
Grand Total	26,269.9	100.00

Note: The total may not tally due to rounding-off of the figures.

NATIONAL SAMPLE SURVEY ORGANISATION

National Sample Survey (NSS) which was set up in 1950 with a programme of conducting large scale surveys to provide data for national income estimation and for planning and policy formulation, has since grown into one of the largest organisations of its kind in the world and expanded its activities in several directions. It is today a major fact-finding body and occupies a unique position in the nation's statistical system. Over the years, it has enlarged and diversified the data-base, epecially in areas which are vital for development planning. It carries out annually socio-economic surveys covering various facets of the population, undertakes field-work of the Annual Survey of Industries and carries out sample checks of area and yield of crops to improve the quality of estimation of agricultural production, prepared by the states. Its total number of personnel is now about 6,000, having over 170 offices spread throughout the country.

The NSS was reorganised in 1970 and all aspects of its work were entrusted to a single government agency, the National Sample Survey Organisation (NSSO) under the overall direction of a Governing Council with requisite independence and autonomy in the matter of collection, processing and publication of data. In addition to the Chairman, the Governing Council is composed of five academicians, six officials of the 'user departments' in the Centre and states and six functionaries of the Department of Statistics.

It is headed by a Chief Executive Officer who is also the Member-Secretary of the Governing Council. It has four functional divisions namely: (i) Survey Design and Research, (ii) Field Operations, (iii) Data Processing and (iv) Data Analysis and Publication. Each division is under the charge of a director. He is assisted by a team of statisticians and necessary supporting staff.

The subject programme of socio-economic surveys conforms to a well-defined cycle of surveys extending over a period of ten years. These include surveys on (i) demography, health and family welfare, (ii) assets, debt and investment, (iii) land-holdings and live-stock enterprises, to be repeated once in ten years, (iv) employment, rural labour and consumer expenditure and (v) unorganised enterprises in non-agricultural sector, to be repeated once in five years. The five groups of subjects cited above cover in all seven years out of a ten-year programme. Remaining three years out of a decade are kept open for undertaking surveys on subjects unexplored so far as also to accommodate special requests from the Centre and states. During the recent years, changes had to be made in this programme to accommodate follow-up surveys to Economic Census, 1977 and 1980 and to survey on social consumption. Because of this and other developments, it is proposed to redefine this cycle. Surveys on other subjects of interest to users are either integrated with one of the foregoing surveys or taken in a year open to other topics.

The Central sample is about 9,000 villages and 5,000 urban blocks at the first stage from which a sample of about 1.5 lakh households is selected. The states and union territories participate in the socio-economic surveys at least on an equal matching basis.

Collection of data for the Annual Survey of Industries (ASI) is a regular annual feature of its activities and is being conducted under the statutory provisions of the Collection of Statistics Act, 1953, and the Collection of Statistics (Central) Rules, 1959, covering all the factories registered under Section 2m (i) and 2m (ii) of the Factories Act, 1948, the electricity undertakings registered with Central Electricity Authority and bidi and cigar establishments registered under Bidi and Cigar Workers (Conditions of Employment) Act, 1966.

The data collected under ASI relate to capital structure, employment and emoluments, consumption of fuels and lubricants, raw material and other inputs, outputs, value added by manufactured labour statistics, housing statistics and other characteristics of factories/establishments to meet the requirements of various users in the governments and outside. ASI 1986-87 was taken up from October 1987, with a gross allotment of 86,000 factories.

The role of NSSO in the field of agricultural statistics is to provide technical guidance to the states in the conduct of crop estimation survey and to keep a continuous watch on the quality of agricultural statistics being collected by them with a view to suggesting measures for their improvement.

A scheme for improvement of crop statistics was introduced in 1973-74 with a view to locating through joint efforts of the Central and state authorities, deficiencies in the system of collection of crop statistics and to suggest remedial measures. Under the scheme, sample checking of the primary field work relating to area enumeration and area aggregation in approximately 5,000 villages and supervision of about 15,000 crop-cutting experiments is undertaken in every agricultural year by the NSSO. The states also participate in this programme on a matching basis.

The field work for the 42nd round (July 1986-June 1987) of NSSO survey on social consumption and the problems of the aged and ex-servicemen covering the whole country except Ladakh and Kargil districts of Jammu and Kashmir and rural areas of Nagaland, was completed by June 1987. The survey aimed to collect data for an assessment of the benefits derived by various sections of the society from public expenditure incurred by the Government, particularly in respect of public health and education. Besides, two other new enquiries on the problems of persons aged 60 years and above and the other on the problems of ex-servicemen were carried out in this round. In all, 8,525 villages and 4,639 urban blocks were covered. The states and the union territories participated in the programme, generally on equal matching basis.

A survey on employment-unemployment and consumer expenditure was launched during the 43rd round (July 1987-June 1988). The survey covered the whole country except Ladakh and Kargil districts of Jammu and Kashmir and rural areas of Nagaland. This is the fourth quinquennial survey. The main subjects of enquiry were employment and unemployment and household consumer expenditure. In addition, some information on domestic tourism was also collected in this round. The sample size was of the order of 8,518 villages and 4,648 urban blocks. The states and union territories also participated in the programme on matching basis.

The 44th round survey which commenced from 1 July 1988 will be devoted to a survey on the living conditions of tribal population, housing conditions of general public and current building construction activities.

The survey results are brought out in the form of reports. So far, over 300 reports have been brought out. In the past, the survey results were used to be brought out only in the form of individual reports each covering a particular aspect for all the states. This used to involve considerable delay on account of compilation and printing. With a view to reducing this delay, the NSSO started a quarterly journal of its own *Sarvekshan* from July 1977. The object of this journal is to present all the results of the NSS as and when they are ready for publication with a view to making them available to the readers with minimum possible delay. Analytical articles based on results previously published are also included in the journal. For the priority users, reports in the mimeographed form are available much in advance.

PRICES

Under the revised index numbers of wholesale prices (with base 1970-71 = 100), the commodities are distributed under three major groups, namely: (i) primary articles, (ii) fuel, power, light and lubricants and (iii) manufactured products. The groups are further divided into sub-groups.

The primary articles group is broadly comparable with the two groups of the old classification *viz.*, "food articles" and "industrial raw materials" with certain minor adjustments. The third group "manufactured products" contains sub-groups under which semi-manufactured and manufactured products have been classified.

Table 12.8 gives the index numbers of wholesale prices for 1971-72, 1976-77 and from 1980-81 to 1987-88 with revised base (1970-71 = 100).

CONSUMER PRICES

Table 12.9 shows the consumer price index numbers for industrial workers for 1970-71 to 1987-88 along with indices for some selected centres (table 12.10) out of 50 centres covered and a weighted average thereof gives the all-India index.

In 1985-86, the all-India general index showed an increase of 38 points over that of the previous year. During 1986-87, the all-India general index rose by 54 points and the all-India food index by 62 points. During 1987-88, the all-India general index rose by 62 points and the all-India food index by 67 points.

ECONOMIC CENSUS

The Central Statistical Organisation, in collaboration with the state statistical bureaux, took a major step in 1977 to remove data gaps in the unorganised sectors of non-agricultural economy covering unregistered manufacturing, trade, transport and services by launching a Central plan scheme on economic census and surveys. The first-ever economic census of non-agricultural establishments employing at least one hired worker on a fairly regular basis, carried out during the last quarter of 1977, provided basic information on the number of establishments, number of persons usually working, the nature of activity and other characteristics, such as type of ownership, social group of owner, etc. Following the census, sample surveys of selected establishments in different sectors based on the first economic census-frame were taken up during 1978-79 and 1979-80 to collect detailed information relating to employment, investment, quantity, value of input and output, etc.

The second economic census was synchronised with the house-listing operations conducted in 1980 as a prelude to the 1981 population census. It covered all enterprises engaged in economic activities other than crop production and plantation in all the states and union territories excluding Assam, where the census could not be conducted. According to census results, at all-India level excluding Assam, there were 183.6 lakh enterprises engaged in different

TABLE 12.8 INDEX NUMBER OF WHOLESALE PRICES
(Base : 1970-71 = 100)

Item	Weight	1971-72	1976-77	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
I. Primary Articles	416.67	100.9	167.2	237.5	264.4	273.9	304.1	324.4	331.0	348.5	382.6
Food Articles	297.99	101.1	155.3	207.9	235.1	249.6	283.1	297.4	317.7	338.7	367.3
Non-Food Articles	106.21	98.6	167.4	217.7	240.5	244.6	281.6	319.6	287.0	305.4	385.6
Fibres	31.73	106.6	184.9	179.7	215.7	199.5	227.8	303.4	231.3	194.7	286.8
Oilseeds	42.01	89.9	150.8	230.7	253.8	250.5	302.0	322.4	285.3	347.4	444.6
Minerals	12.47	115.4	449.4	1,110.2	1,168.6	1,105.6	994.0	1,015.1	1,030.2	948.8	720.5
II. Fuel, Power, Light & Lubricants	84.59	105.9	230.8	354.3	427.5	459.7	494.8	518.4	579.9	619.2	642.0
III. Manufactured Products	498.74	109.5	175.2	257.3	270.6	272.1	295.8	319.5	342.6	359.4	384.4
Food Products	133.22	118.4	189.1	308.7	298.9	260.0	298.9	323.8	346.2	381.8	412.7
Beverages, Tobacco and Tobacco Products	27.08	106.8	168.2	210.7	217.4	218.7	246.2	254.0	296.9	348.0	360.4
Textiles	110.26	109.6	155.3	221.7	223.9	232.8	249.6	280.1	275.8	271.3	298.3
Paper & Paper Products	8.51	110.4	180.1	262.2	282.2	299.7	325.8	363.5	378.3	392.6	405.8
Leather & Leather Products	3.85	101.3	227.8	380.1	368.0	361.3	385.9	413.6	491.6	513.4	539.3
Rubber & Rubber Products	12.07	101.7	157.2	248.8	284.1	306.1	316.6	335.3	360.6	381.6	398.6
Chemical & Chemical Products	55.48	101.5	171.4	241.3	260.2	269.2	281.6	292.1	310.9	329.0	352.7
Non-Metallic Mineral Products	14.15	109.3	191.0	278.7	311.7	373.7	404.1	430.6	450.9	447.9	457.7
Basic Metals, Alloys and Metal Products	59.74	104.7	190.1	272.1	317.1	354.6	381.0	419.8	477.1	478.7	511.9
Machinery and Transport Equipment	67.18	105.3	170.1	239.4	265.1	277.9	289.6	303.6	337.9	355.8	372.2
Miscellaneous Products	7.20	102.5	166.0	232.8	239.5	243.2	256.9	269.7	281.8	286.7	293.9
IV. All Commodities	1,000.00	105.6	176.6	257.3	281.3	288.7	316.0	338.4	357.8	376.8	405.4

TABLE 12.9 CONSUMER PRICE INDEX NUMBER FOR INDUSTRIAL WORKERS

Year	Bombay	Ahmadabad	Calcutta	Madras	Kanpur	Delhi	All India	
							All Items	Food
1970-71	182	176	182	170	190	199	186	201
1971-72	190	181	187	182	196	211	192	205
1972-73	203	198	197	203	212	222	207	223
1973-74	233	245	228	229	251	265	250	279
1974-75	289	305	288	301	323	337	317	358
1975-76	300	293	287	314	299	333	313	342
1976-77	298	281	297	288	294	332	301	317
1977-78	318	310	320	311	330	358	324	345
1978-79	325	323	331	318	337	368	331	347
1979-80	359	348	351	350	357	389	360	373
1980-81	400	376	382	388	396	426	401	419
1981-82	460	441	414	446	439	472	451	476
1982-83	502	487	447	475	473	508	486	508
1983-84	564	544	511	550	528	551	547	581
1984-85	609	570	576	576	554	597	582	607
1985-86	654	599	610	630	614	648	620	638
1986-87	717	657	671	681	672	707	674	700
1987-88	791	724	714	756	725	788	736	767

The Index Numbers are based on Labour Bureau's New Series with base year 1960 = 100

economic activities other than crop production and plantation with 536.7 lakh persons usually working in them. Among them, 169 lakh enterprises (92 per cent) were engaged in non-agricultural activities and the rest 14.6 lakh (8 per cent) were in agricultural activities other than crop production and plantation. Rural areas accounted for 61 per cent of the total enterprises. The share of rural areas in the number of non-agricultural and agricultural enterprises was 58.3 and 88.1 per cent respectively. Establishments *i.e.*, enterprises which employed at least one hired worker on a fairly regular basis constituted 27.1 per cent and others which were owned and operated with the help of household labour only accounted for the rest 72.9 per cent. It is important to note that 84 per cent of agricultural enterprises were own-account enterprises and the remaining 16 per cent were establishments. In the case of non-agricultural enterprises, about three-forth of the total non-agricultural enterprises were own-account enterprises and the establishments accounted for about one-fourth.

Considering all enterprises together, around one-fifth of total enterprises (18.3 per cent) was of seasonal nature. About four-fifth of the total enterprises (83 per cent) was working without power/fuel. Nearly one-tenth of the enterprises was owned by scheduled castes. Private enterprises accounted for nearly nine-tenth of the total enterprises.

TABLE 12.10 CONSUMER PRICE INDEX NUMBER FOR URBAN NON-MANUAL EMPLOYEES

(Base 1960 = 100)

Year	Bombay	Calcutta	Madras	Delhi/ New Delhi	All India
1970-71	168	170	175	174	174
1971-72	172	174	188	180	180
1972-73	183	180	203	190	192
1973-74	204	204	231	217	221
1974-75	241	238	291	262	270
1975-76	246	243	306	273	277
1976-77	255	251	294	274	277
1977-78	269	265	311	288	296
1978-79	285	279	321	303	306
1979-80	315	297	350	321	330
1980-81	347	331	390	352	369
1981-82	393	367	439	395	413
1982-83	440	384	470	428	446
1983-84	493	418	531	468	492
1984-85	538	451	577	508	532
1985-86	568	481	611	551	568
1986-87	612	530	671	597	613
1987-88[1]	666	562	736	645	656

[1] Average is based on seven months' indices (April 1987-October 1987)

Of the total 536.7 lakh persons usually working, 244.7 lakh persons (46 per cent) were in the enterprises located in rural areas. Hired workers numbering 290.3 lakh constituted 54 per cent of the total persons. Only five per cent of the total 536.7 lakh persons were working in agricultural enterprises. The share of rural areas in respect of employment in agricultural enterprises was 86 per cent. The number of persons working in non-agricultural enterprises was 508.2 lakh, constituting 95 per cent of the total. Among the total persons working in non-agricultual enterprises, 220.2 lakh were in the rural areas, of which 43.5 per cent were hired labour. About two-third of the 288 lakh persons woking in the non-agricultural enterprises located in the urban areas, were hired workers.

In the non-agricultural sector, manufacturing and repair services; wholesale and retail trade, and community, social and personal services were the three most important activity-groups from the point of view of number of enterprises both in rural and urban areas. These activity-groups share among themselves 89 per cent of the non-agricultural enterprises.

13 Finance

THE Ministry of Finance is responsible for the administration of finances of the Government. It is concerned with all economic and financial matters affecting the country as a whole, including the mobilisation of resources for development and other purposes. It regulates the expenditure of the Government including the transfer of resources of states. The Ministry comprises three Departments, namely, (i) Economic Affairs, (ii) Expenditure, and (iii) Revenue.

The Department of Economic Affairs consists of six main divisions, namely, (i) Economic, (ii) Banking, (iii) Insurance, (iv) Budget, (v) Investment and (vi) External Finance. This Department *inter-alia*, monitors current economic trends and advises the Government on all matters of internal and external economic management, including the working of commercial banks, term-lending institutions, investment regulations, external assistance, etc. The preparation of the Budget of the Union of India, as well as the state governments and union territory administrations with legislature when under the President's Rule and their presentation to the Parliament, is also the responsibility of this Department.

The Department of Expenditure comprises eight main Divisions, namely, (i) Plan Finance Division, (ii) Establishment Division, (iii) Cost Accounts Branch, (iv) Controller General of Accounts, (v) Finance Commission Division, (vi) Implementation Cell, (vii) Integrated Finance Division and (viii) Staff Inspection Unit.

The Department of Revenue exercises control in respect of revenue matters relating to direct and indirect Union taxes through two statutory boards, namely, the Central Board of Direct Taxes and the Central Board of Excise and Customs. The Department is also entrusted with the administration and enforcement of controls and regulatory measures provided in the enactments concerning Central sales-tax, stamp duties, gold control, foreign exchange and other relevant fiscal statutes. Control over production and disposal of opium and its products is also vested with this Department.

ECONOMIC AFFAIRS

PUBLIC FINANCE

The power to raise and disburse public funds has been divided under the Constitution between the Union and the state governments. The sources of revenue for the Union and the states are, by and large, mutually exclusive, if shareable taxes and duties between them are excluded.

The Constitution provides that: (i) no tax can be levied or collected except by an authority of law; (ii) no expenditure can be incurred from public funds, except in the manner provided in the Constitution, and (iii) the executive authorities must spend public money only in the manner sanctioned by the Parliament in the case of the Union and by the state legislature in the case of a state.

All receipts and disbursements of the Union Government are kept under two separate headings, namely, the Consolidated Fund of India and the Public Account of India. All revenues received, loans raised and money received in repayment of loans by the Union Government form the Consolidated Fund. No money can be withdrawn from this Fund except under the authority of an Act of Parliament. All other receipts, such as, deposits, service funds and remittances go into the Public Account and the disbursements therefrom are not subject to the vote of Parliament. To meet unforeseen needs, not provided in the Annual Appropriation Act, a Contingency Fund of India has been established under Article 267(1) of the Constitution. The Constitution provides for the establishment of a Consolidated Fund, a Public Account and a Contingency Fund for each state.

The Railways, the largest public undertaking, present their budget separately to the Parliament. The appropriations and disbursements under the Railway budget are subject to the same form of Parliamentary control as other appropriations and disbursements. However, as the Railways have no separate cash balance of their own, the total receipts and disbursements of the Railways are incorporated in the budget of the Union Government as part of the General Budget.

SOURCES OF REVENUE

The main sources of Union revenue are customs duties, Union excise duties, corporate and income taxes. The Railways and the Posts and Telegraphs also pay the Union Government dividend on the capital invested in them.

The main heads of revenue in the states are the taxes and duties levied by state governments, the share of taxes levied by the Union Government and grants received from the Union. Property taxes, octroi and terminal taxes are the mainstay of local finance.

TRANSFER OF RESOURCES

The devolution of resources from the Union to the states is a salient feature of the system of federal finance of India. Apart from their share of taxes and duties, state governments receive statutory and other grants as well as loans for various development and non-development purposes. The total amount of resources transferred to the states during each Plan period is shown in table 13.1.

ANNUAL FINANCIAL BUDGET

An estimate of all anticipated receipts and expenditure of the Union Government for the ensuing financial year is laid before the Parliament. This is known as the 'Annual Financial Statement' or the 'Budget' and covers the Central Government's transactions of all kinds in and outside India occurring during the preceding year, the year in which the statement is prepared as well as the ensuing year or the 'Budget Year', as it is known.

TABLE 13.1 RESOURCES TRANSFERRED TO STATES

(Rs crore)

Period	Taxes and Duties	Grants	Loans (Gross)	Total
First Plan	344	288	799	1,431
Second Plan . . .	688	789	1,411	2,868
Third Plan . . .	1,196	1,304	3,100	5,600
Annual Plans				
1966-67	373	419	916	1,708
1967-68	417	471	869	1,757
1968-69	492	499	891	1,882
Fourth Plan . .	4,562	3,831	6,708	15,101
Fifth Plan	8,268	8,198	8,978	25,444
Annual Plan 1979-80	3,406	2,288	2,697	8,391
Sixth Plan	23,728	17,941	23,722	65,391
1985-86	7,491	6,705	9,907	24,103
1986-87	8,475	7,353	7,685	23,513
1987-88 (RE) . .	9,598	9,036	9,896	28,530
1988-89 (BE) . .	10,662	9,819	9,934	30,415

RE: Revised Estimates BE: Budget Estimates

The presentation of the Budget is followed by a general discussion on it in both Houses of Parliament. The estimates of expenditure from the Consolidated Fund of India are placed before the Lok Sabha in the form of 'Demands of Grants'. All withdrawals of money from the Consolidated Fund are thereafter authorised by an Appropriation Act passed by the Parliament every year. The tax proposals of the Budget are embodied in a Bill which is passed as the 'Finance Act' of the year.

Estimates of receipts and expenditure are similarly presented by state governments in their legislatures before the beginning of the financial year and legislative sanction for expenditure is secured through similar procedure. The budgetary position of the Union Government from 1987-88 onwards is shown in table 13.2.

PUBLIC DEBT

Public debt includes internal debt comprising borrowings inside the country like market loans, compensations and other bonds, treasury bills issued to Reserve Bank, state governments, commercial banks and other parties as well as non-negotiable non-interest bearing rupees securities issued to international financial institutions, and the external debt comprising loans from foreign countries, international financial institutions, etc. Table 13.3 gives an analysis of the public debt at the end of selected years.

TABLE 13.2 BUDGETARY POSITION

(Rs crore)

	1987-88 (Actuals)	1988-89 (Budget Estimates)	1988-89 (Revised Estimates)	1989-90 (Budget Estimates)
1. Revenue Receipts	37,226	42,798	43,135	52,630
2. Revenue Expenditure	46,363	52,640	54,165	59,642
3. Revenue Deficit	9,137	9,842	11,030	7,012
4. Capital Receipts	22,026	23,278	24,708	22,194
5. Capital Expenditure	18,705	20,920	21,618	22,519
6. Total Receipts	59,252	66,076	67,843	74,824
7. Total Expenditure	65,068	73,560	75,783	82,161
8. Overall Deficit	5,816	7,484	7,940	7,337

MONETARY AGGREGATE AND CURRENCY

Money supply comprises currency with the Public and demand deposits with banks including the "other" deposits with Reserve Bank of India, withdrawable on demand. The trends in Money Supply and its components since 1970-71 are indicated in table 13.4.

BANKING

Allthough some form of banking, mainly, the money-lending type, has been in existence in India from ancient times. It was only a little over a century ago that modern banking took its birth. The earliest institutions which undertook banking business under the British regime were the agency houses, which carried on banking business, in addition to their trading activities. Most of these agency houses were closed down during 1929-32. A number of banks which came into existence between the thirties and forties of the last century were also in great trouble. Prominent among these were three presidency banks which were later amalgamated into the Imperial Bank of India in 1919 following a banking crisis.

The first bank of limited liability managed by Indians was Oudh Commercial Bank founded in 1881. Subsequently, the Punjab National Bank was established in 1894. The *swadeshi* movement which began in 1906 encouraged the formation of a number of commercial banks. Banking crisis in 1913-1917 and the failure of 588 banks in various states during the decade ending 1949, underlined the need for regulating and controlling commercial banks. The Banking Companies (Inspection Ordinance) was passed in January 1946 and the Banking Companies (Restriction of Branches) Act in February 1946. The Banking Companies Act was passed in February 1949 which was subsequently amended to read as Banking Regulation Act.

With a view to bringing commercial banks into the mainstream of economic

TABLE 13.3 PUBLIC DEBT OF THE GOVERNMENT OF INDIA

(Rs crore)

Item	As at the end of March							
	1982	1983	1984	1985	1986	1987	1988 (Revised Estimates)	1989 (Budget Estimates)
1. Internal Debt (i to vi)	35,653	46,939	50,263	58,537	71,039	86,313	99,520	1,13,769
(i) Current Market Loans	18,461	22,232	26,270	30,366	35,241	40,759	47,759	54,760
(ii) Others[1]	309	429	520	551	545	516	454	241
(iii) Special Bearer Bonds	964	964	964	964	964	964	964	964
(iv) Treasury Bills	10,273	17,431	15,756	19,452	26,014	19,876	25,301	32,785
(v) Special floating and other loans[2]	1,536	1,673	2,183	2,554	3,088	4,331	5,365	5,532
(vi) Special Securities issued to RBI	4,110	4,210	4,570	4,650	5,187	19,867	19,677	19,487
2. External Debt	12,328	13,682	15,120	16,637	18,153	20,299	22,518	25,539
Public Debt (+2)	47,981	60,621	65,383	75,174	89,192	1,06,612	1,22,038	1,39,308

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[1] Comprises balance of expired loans, compensation and other bonds such as National Rural Development Bonds and Capital Investment Bonds. Annuity certificates are excluded.

[2] These represent mainly non-negotiable non-interest bearing securities issued to international financial institutions like the International Monetary Fund, International Bank for Reconstruction and Development and Asian Development Bank.

TABLE 13.4 MONEY SUPPLY WITH THE PUBLIC

(Rs crore)

Last Friday of the year	Currency with the Public				Deposit Money of the Public	
	Notes in circulation (a)	Circulation of rupee coins (b)	Circulation of small coins	Cash with banks	Demand deposits with banks	Other deposits with Reserve Bank (c)
1970-71	4.169	247	137	186	2,910	44
1975-76	6,492	331	224	343	6,385	54
1980-81	13.689	333	286	844	9,336	317
1983-84	19,888	386	333	1,054	13,195	318
1984-85	23,088	426	351	1,202	16,382	603
1985-86	25,519	531	409	1,291	18,180	251
1986-87	28,762	709	483	1,369	22,240	352
1987-88	33.812	831[1]	507[1]	1,538[1]	23,681[1]	353[1]
1988-89 (April)	35,012	831[1]	507[1]	1,566[1]	23,946[1]	454[1]
1988-89 (May)	35.695	831[1]	507[1]	1,635[1]	23,318[1]	423[1]

(a) Data up to April 1985: net of return of about Rs 43 crore of Indian currency from Pakistan awaiting adjustment.

(b) Estimate: ten rupee commemorative coins issued since October 1969, two rupee coins issued since November 1982 and five rupee coins issued since November 1985 are included under rupee coins.

(c) Excludes balances held in IMF Account No. 1, Reserve Bank of India Employees' Provident Fund, Pension Fund and Cooperative Guarantee Fund, amounts collected under the Compulsory Deposit Scheme 1974 and extraordinary items.

1. Provisional.

development with definite social obligations and objectives, Government issued an ordinance on 19 July 1969 acquiring the ownership and control of 14 major banks in the country, with deposits exceeding Rs 50 crore each. Six more commercial banks were nationalised with effect from 15 April 1980.

The objectives of the public sector banking system were outlined on 21 July 1969. Some of the objectives are: (a) mobilisation of savings of the people to the largest possible extent and to utilise them for productive purposes; (b) operations of the banking system should be prompted by a larger social purpose and should be subject to close public regulation; (c) legitimate credit needs of private sector industry and trade, big or small, should be met; (d) to ensure that the needs of productive sectors of the economy and in particular those of farmers, small scale industrialists and self-employed professional groups are met in an increasing manner; (e) nationalised banks to actively foster the growth of the new and progressive entrepreneurs and create fresh opportunities for hitherto neglected and backward areas in different parts of the country, and (f) to curb the use of bank credit for speculative and other unproductive purposes.

RESERVE BANK OF INDIA

The Reserve Bank of India (RBI) was established under the Reserve Bank of India Act, 1934 on 1 April 1935 and nationalised on 1 January 1949. The main objectives are regulating issue of bank notes, keeping the foreign exchange reserves of the country, operating the currency and credit system of the country with a view to securing monetary stability and developing the financial structure of the country on sound lines consistent with the national socio-economic objectives and policies.

The Bank is the sole authority for the issue of currency in India other than one rupee coins and subsidiary coins and notes. As the agent of the Central government, the Reserve Bank undertakes the distribution of one rupee notes and coins, as well as small coins issued by the Government. The Bank acts as banker to the Central government, state governments, commercial banks, state cooperative banks and to some of the financial institutions. It formulates and administers monetary policy with a view to promoting stability of prices while encouraging higher production through appropriate deployment of credit. The Reserve Bank plays an important role in the maintenance of exchange value of the rupee and acts as an agent of the Government in respect of India's membership of the International Monetary Fund. The Bank also performs a variety of developmental and promotional functions.

COMPOSITION OF BANKING SYSTEM

The commercial banking system in India consisted of 279 scheduled[1] commercial banks and four non-scheduled commercial banks at the end of June 1987. Of the scheduled commercial banks, 224 are in the public sector and these account for 90 per cent of the commercial banking system. Within the public sector banking system, 196 banks are regional rural banks, specially set up to increase the flow of credit to smaller borrowers in rural areas. These banks have specified areas of operations, usually limited to two to three districts. Their lending operations are also directed towards specified weaker sections of the community. They also undertake some other commercial banking business. The remaining 28 banks in the public sector are regular commercial banks and transact all types of commercial banking business. Some important indicators in regard to the progress of commercial banking in India during the recent past is shown in table 13.5

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[1] According to the notification under Reserve Bank of India Act, banks which have not less than Rs 5 lakh as capital and reserve can alone be scheduled by the Reserve Bank.

Amongst the public sector banks as at the end of March 1988, the State Bank of India (SBI) was the biggest unit with 7,598 branches and deposits of Rs 26,007 crore (excluding inter-bank deposits) and advances of Rs, 16,297 crore (excluding inter-bank credits). Apart from the main State Bank of India, there are seven other banks called associate banks of State Bank of India. In these banks SBI owns either the entire or the majority of the share capital. The State Bank and its associate banks as a group account roughly for one-third of the aggregate banking business conducted by public sector banks (aggregate of deposits and advances) and over 29 per cent of the aggregate business of the entire banking system. The other 20 banks in the public sector are known as nationalised banks, 14 of which came in the public sector on 19 July 1969 and six others on 15 April 1980.

The philosophy of the bank nationalisation was that these financial institutions which mobilised the savings of the public should broadly function as an instrument for promoting economic and social development in more purposive manner. In the post-nationalisation period, there has been a rapid growth of the banking system.

DEPOSIT MOBILISATION

There has been a significant increase in the deposits of the scheduled commercial banks in the post-nationalisation period. At the end of June 1969, the deposits of these banks aggregated to Rs 4,646 crore, about 15.5 per cent of the national income at current prices. By the end of December 1987, they had increased to Rs 1,19,023 crore *i.e.,* 52 per cent of the national income and to Rs 1,18,678 crore by the end of March 1988. The deposits with banks in the public sector were Rs 3,871 crore in June 1969. At the end of December 1987, they were Rs 1,07,202 crore, which however, decreased to Rs 1,06,584 crore by the end of March 1988. The deposits mobilised by the banks are utilised for two purposes: (i) investments in Government securities and other approved securities in fulfilment of liquidity stipulation, and (ii) loans and advances to borrowers.

BRANCH EXPANSION

As against 8,262 branches at the end of June 1969, the total number of

TABLE 13.5 PROGRESS OF COMMERCIAL BANKING IN INDIA

(In June)

Item	1969	1973	1978	1980	1981	1982	1983	1984	1985	1986	1987[1]
1. Number of Commercial Banks	89	83	128	187	187	206	226	247	268	276	279
(i) Scheduled Commercial Banks	73	74	122	148	183	202	222	243	264	273	275
(ii) Regional Rural Banks	—	—	48	73	102	121	142	162	183	194	196
(iii) Non-scheduled commercial banks	16	—	6	5	4	4	4	4	4	4	4
2. Number of offices in India	8,262	15.362	28,016	32,419	35,707	39,177	42,079	45,332	51,385	53,265	53,859
3. Population per office (in thousand)	64	37	23	21	19	18	17	16	15	14	15
4. Aggregate deposits of Scheduled Commercial Banks (Rs crore)	4,646	9,165	23,133	33,377	40,549	46,128	54,039	64,620	77,075	91,828	1,07,345
5. Aggregate credit of Scheduled Commercial Banks (Rs crore)	3,599	6.412	15,694	22,068	26,551	30,180	36,006	43,613	50,921	57,229	63,753
6. Per capita deposits of Scheduled Commercial Banks (Rs)[2]	88	160	361	494	587	654	750	878	1,026	1,198	1,374
7. Per capita credit of Scheduled Commercial Banks (Rs)[2]	68	112	243	327	385	428	500	593	678	747	816
8. Deposits as percentage of national income (at current prices)[3]	15.5	21.4	29.4	35.8	35.9	36.2	38.4	38.3	41.5	43.6	47.6

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1. Provisional.
2. Based on mid-vear population figures estimated by the Registrar General of India.
3. Relates to end-March, National Income data relates to revised series. Data for 1982 and 1983 based on provisional estimates and 1984 on quick estimates

commercial bank branches at the end of September 1988 was 55,797. The net increase in the number of functioning offices between June 1969 and September 1988 was 47,535. Consequently, the banking coverage in the country as a whole had been improved from one office for 65,000 persons in June 1969 to one office for 12,000 by the end of March 1988.

COVERAGE OF RURAL AREAS

In the post-nationalisation period, the thrust of the branch expansion policy has been on improving availability of banking facilities in rural areas. Of the total increase in the branch network during June 1969 and September 1988, (47,535 branches), 31,429 were at rural centres having population of up to 10,000 people.

REGIONAL RURAL BANKS

Since 1975, a new category of banking institutions has been brought into existence in the form of regional rural banks to increase local involvement of the banks for meeting the credit requirements of weaker sections, small and marginal farmers, landless labourers, artisans and small entrepreneurs. These banks have limited area of operation, their staff being drawn from the area of their operation and are required to lend only to weaker sections of society. They have access to liberal refinance facilities from the National Bank for Agriculture and Rural Development and from each of the banks sponsoring its regional rural banks. At the end of March 1988, 196 regional rural banks had opened 13,386 branches covering 365 districts, mobilised deposits to the tune of Rs 2,307 crore and had outstanding advances amounting to a little over Rs 2,338 crore.

DISTRICT PLANNING AND COORDINATION

For facilitating coordinated effort on the part of all the banks to increase their involvement in well planned effort to promote credit based development of districts' economy and to ensure adequate support to beneficiary-oriented development programme, Lead Bank Scheme was introduced towards the close of 1969. In implementing the scheme, the bank designated as the 'Lead Bank' for each district is expected to undertake district credit planning, involve other banks in the formulation of specific programme contents, allocate shares among various credit institutions operating in the district in relation to credit deployment and bring about a coordinated effort on the part of all such institutions to deploy credit in support of identified programmes.

To ensure coordination between the activities of different banks on the one hand and all the banks and district level agencies on the other, district consultative committees presided over by the district collector meet at regular intervals and sort out problems of implementation. District level review meetings are also held where implementation of Annual Action Plans is reviewed. Forums also exist for looking into implementation of anti-poverty schemes at block level.

ADVANCES

Commercial banks have been investing part of their deposits in Government securities and bonds and debentures of Government-associated bodies, in pursuance of the liquidity requirements stipulated by the Reserve Bank. With the growth of their deposits as also owing to successive upward revisions of the Statutory Liquidity Ratio, there has been significant rise in the investment of the banks in Government and other approved securities, from Rs 1,727 crore in March 1970 to Rs 49,993 crore up to July 1988 (excluding RRBs). The investment of funds by scheduled commercial banks in such securities now constitutes an important feature of the scheme of resources mobilisation for financing plan programmes.

CREDIT DEPLOYMENT

Advances in whatever form constitute the end objective of bank's operation. From a low level of Rs 3,599 crore in June 1969, advances of scheduled commercial banks increased to Rs 64,677 crore by December 1986 to Rs 72,549 crore by December 1987 and to Rs 74,903 crore by March 1988. Advances of banks in the public sector increased from Rs 3,017 crore to Rs 65,352 crore by March 1988.

SECTORAL DEPLOYMENT

More significant than the increase in the volume of bank credit are the changes in the sectoral deployment. In the pre-nationalisation days, large and medium industry and whole-sale trade accounted over 78 per cent of the bank credit. By March 1988 the share of these sectors (excluding credit for public food procurement) had declined to about 41 per cent. Correspondingly, the share of priority sectors, food procurement agencies, etc., had shown significant enlargement.

ADVANCES IN PRIORITY SECTORS

Extension of credit to small borrowers in the hitherto neglected sectors of the economy has been one of the major tasks assigned to the public sector banks in the post-nationalisation period. To achieve this objective, the banks have drawn up schemes to extend credit to small borrowers in sectors like agriculture, small scale industry, road and water transport, retail trade and small business, which traditionally had very little share in the credit extended by the banks. Taking into account the need to provide resource requirements to the weaker sections, for specific needs, consumption credit (with certain limits and for specific need) has been incorporated in the priority sectors. Similarly, small housing loans (not exceeding Rs 5,000) to scheduled castes/scheduled tribes and other weaker sections are also classified as priority sector advances.

The number of borrowal accounts with the public sector banks for these categories of borrowers increased from 2.60 lakh to 303.92 lakh between June

1969 and March 1988. The amount outstanding during the same period increased from Rs 441 crore to Rs 28.468 crore. The public sector banks accounted for 45.8 per cent of total bank credit by March 1988.

Table 13.6 shows the achievements of public sector banks in stepping up the flow of credit in various priority sectors.

CREDIT TO WEAKER SECTIONS

To increase the credit flow to the smaller and poorer borrowers, a broader concept of weaker sections comprising small and marginal farmers, landless labourers, tenant farmers and share-croppers, artisans, village and cottage industries, beneficiaries of Integrated Rural Development Programme, scheduled castes and scheduled tribes, differential rate of interest (DRI) beneficiaries, has been evolved. This section was slated to receive not less than 10 per cent of net bank credit by March 1985. By March 1988, weaker sections had received Rs 7,310 crore and accounted for 10.3 per cent of aggregate advances of public sector banks.

DIRECT FINANCE TO AGRICULTURE

Public sector banks were initially given a target of extending 15 per cent of total advances as direct finance to agriculture to be achieved by March 1985. This target was subsequently raised to 16 per cent to be achieved by March 1987 and more recently it has been raised to 17 per cent to be achieved by March 1989. As against this, public sector banks had already achieved 16.8 per cent by March 1988.

People belonging to scheduled castes and scheduled tribes have been recognised as the most vulnerable sections of the community. Banks have been asked to make special efforts to assist them with adequate credit to enable them to undertake self-employment ventures or acquire income-generating capital assets so as to improve their standard of living. At the end of March 1988, the public sector banks had assisted scheduled caste/scheduled tribe borrowers through 69 lakh accounts to the tune of Rs 1,761 crore.

INTEGRATED RURAL DEVELOPMENT PROGRAMME

The programme envisages capital subsidy and credit assistance to identified poor families for acquiring income-generating assets to come up above the poverty line. The programme envisaged a capital subsidy flow of Rs 1,500 crore during the Sixth Plan period with a matching credit mobilisation of Rs 3,000 crore to benefit 1.50 crore families. As against this target, the banking system had mobilised term credit of Rs 3,102 crore assisting 1.66 crore beneficiaries. The provisional target for Seventh Plan has been set to assist two crore beneficiaries. During 1987-88, banking system had assisted 42.47 lakh beneficiaries involving term credit of Rs 1,175.35 crore. The corresponding figures for 1988 (April-December) are a sum of Rs 762 crore to 23.62 lakh beneficiaries (provisional).

TABLE 13.6 ADVANCES OF PUBLIC SECTOR BANKS

Sector	No. of Borrowal Accounts (lakh)					
	June 1969	Dec 1984	Dec 1985	Dec 1986	Dec 1987	March 1988
1. Agriculture						
(i) Direct Finance	2.67	134.79	150.27	165.58	180.34	180.93
(ii) Indirect Finance	—	9.91	9.73	9.56	7.73	7.23
2. Small Scale Industry	0.57	14.13	15.95	18.11	21.71	22.61
3. Road and Water Transport Operators	0.03	5.48	5.92	6.16	88.10	93.15
4. Professional and Self-Employed Persons	—	14.49	16.13	18.26		
5. Education	0.01	0.58	0.66	0.68		
6. Housing	—	1.62	1.64	1.95		
7. Consumption	—	2.02	1.62	1.49		
8. Other Priority Sectors	—	33.09	40.02	47.95		
Total	3.28	216.11	241.94	269.74	297.88	303.92

TABLE 13.6 (Continued)

Sector	Amount Outstanding (crore)					
	June 1969	Dec 1984	Dec 1985	Dec 1986	Dec 1987	March 1988
1. Agriculture						
(i) Direct Finance	188.40	5,970.36	7,415.13	8,929.97	10,287.23	10,437.95
(ii) Indirect Finance	—	1,373.70	1,378.32	1,377.50	1,425.27	1,418.99
2. Small Scale Industry	285.90	6,233.61	7,470.70	8,684.07	10,166.32	10,547.59
3. Road and Water Transport Operators	8.20	1,774.08	1,882.70	1,958.62		
4. Professional and Self-Employed Persons	0.30	510.00	653.29	883.68	5,931.22	6,063.26
5. Education	0.50	25.28	32.68	35.85		
6. Housing	—	53.14	63.80	106.06		
7. Consumption	—	18.52	21.07	18.91		
8. Other Priority Sectors	—	1,419.25	1,730.11	2,140.62		
Total	483.30	17,377.94	20,647.80	24,085.28	27,810.04	28,467.79

Note: 1. Data for June 1969 is in respect of scheduled commercial banks.

2. Other priority sectors include advances given to: (i) retail trade, (ii) small business, (iii) SSC/Organisation for on-lending to other priority sectors and SSO's for SC/ST.

3. Data for December 1987 and March 1988 is provisional

4. Source: Priority Sector returns received from commercial banks.

SELF-EMPLOYMENT SCHEME FOR EDUCATED UNEMPLOYED YOUTH

This scheme was introduced in the year 1983-84 to create self-employment opportunities and to motivate the educated youngmen and women to take up self-employment ventures. The scheme was extended to all areas of the country excepting cities with more than 10 lakh population as per 1981 census. Under the scheme, composite loans not exceeding Rs 35,000 for industrial ventures, Rs 25,000 for service ventures and Rs 15,000 for business ventures at an interest rate of 10 per cent per annum in backward areas and 12 per cent per annum in other areas, are granted. Banks are not to ask for any margin money or seek collateral security of third party guarantee for the loan. The annual target of the banks was to assist 2.5 lakh beneficiaries. Against this, the banks had assisted 2.42 lakh beneficiaries in 1983-84 involving Rs 401.54 crore. Similarly, in 1984-85 and 1985-86, 2.29 and 2.21 lakh beneficiaries were assisted with an amount of Rs 429.52 crore and Rs 429.99 crore respectively. In 1987-88, 1.20 lakh beneficiaries were provisionally assisted involving Rs 258.69 crore.

INTEREST RATE STRUCTURE

The lending rate structure of the scheduled commercial banks is weighted in favour of priority sector advances and within that category in favour of smaller/poorer borrowers.

Public sector banks are operating a scheme of differential rate interest (DRI). The scheme covers poor borrowers having an annual family income of not more than Rs 6,400 in rural areas and Rs 7,200 in other areas and not owning more than 2.5 acres of unirrigated or one acre of irrigated land. They are given credit support at four per cent per annum rate of interest for sums up to Rs 5,000 as term loan and Rs 1,500 as working capital loan for productive ventures. Public sector banks had an outstanding DRI credit of Rs 597.65 crore against 48.14 lakh borrowal accounts at the end of December 1987.

Housing loans up to Rs 5,000 to scheduled caste tribe borrowers are also extended at four per cent rate of interest per annum. Other loans such as those to small and marginal farmers and landless labourers for activities allied to agriculture, to artisans, village and cottage industries, to petty traders/vendors, also carry concessional rate of interest. The degree of concessions depends on the purpose of the loan and the size of the loan.

EXPORT FINANCE

In keeping with the priority accorded to export, commercial banks provide credit to this sector at concessional rates of interest. The amount of outstanding export credit granted by scheduled commercial banks stood at Rs 2,884 crore by the end of December 1986.

To encourage the banks to provide credit support to export effort, Reserve Bank provides liberal refinance on incremental export credit. Currently, banks are provided export refinance to the extent of 100 per cent of the increase in export credit over the monthly average level for 1984.

The Reserve Bank also operates a duty drawback scheme under which exporter can get interest free loans from banks up to 90 days against shipping bills provisionally certified by the customs authorities towards refund of duty. The banks in turn are eligible to avail of interest free refinance from the Reserve Bank pending final settlement of duty drawback claims of the exporters.

COORDINATION AMONG BANKS AND ADMINISTRATIVE AGENCIES

With the increasing role being assigned to the banks to lend active credit support to the programmes of economic development of backward classes and weaker sections, coordination among the banks and between the banks and developmental agencies has become important. To achieve this, different forums have been created at district, state and regional levels. At the district level, there are consultative committees with collectors as their chairmen and the lead banks's officers as their convenors. At the state level, there are two forums, *viz.*, state level bankers' committees and state level coordination committees. The former comprise bank officers at middle-management level, while the latter also includes heads of departments of the state governments. At the apex level, there are six regional consultative committees having representations at minister level.

INDIAN BANKS ABROAD

One hundred and nineteen branches (including offshore branches and mobile agencies) of nine Indian commercial banks were operating in foreign countries as on 31 July 1988. These branches are spread over a number of countries and are located in major centres including international financial centres like London, Singapore, Baharain, Tokyo and Paris. The largest concentration is in the United Kingdom (33); followed by Hong Kong (10), Fiji Islands (9), Kenya (9), USA (7) and the United Arab Emirates (6). These branches specialise in various areas of international banking including the financing of foreign trade. They cater to the needs of Indian exporters and importers and to that extent they form an integral part of the domestic banking system.

Besides these branches, Indian commercial banks are having representative offices in USA, Indonesia, Iran, Egypt, USSR, Italy, Zimbabwe and Australia. Indian commercial banks are also having wholly-owned subsidiaries/joint ventures in USA, Canada, Kenya, Hong Kong, Zambia, Nigeria, Uganda, Malaysia and Bhutan.

DEVELOPMENT FINANCIAL INSTITUTIONS

INDUSTRIAL DEVELOPMENT BANK OF INDIA

The Industrial Development Bank of India (IDBI) established under the Industrial Development Bank of India Act, 1964, is the principal financial institution for providing credit and other facilities for the development of industry, for coordinating the working of institutions engaged in financing, promoting or developing industries and for assisting the development of such institutions. The IDBI has been providing direct financial assistance to large and medium large industrial concerns and also providing help to small and medium industrial concerns through banks and state level financial institutions.

The paid-up capital of IDBI wholly subscribed by the Government of India as at the end of 30 June 1988 stood at Rs 495 crore. Cumulatively by the end of June 1988, the IDBI had sanctioned and disbursed assistance aggregating Rs 29,867.90 crore and Rs 21,371.50 crore respectively. The net profit of the IDBI for the year July 1987 to June 1988 was Rs 180.09 crore.

INDUSTRIAL FINANCE CORPORATION OF INDIA

The Industrial Finance Corporation of India (IFCI) is a national level development bank set up in 1948, under the Industrial Finance Corporation Act, 1948, with the objective of providing medium and long-term finance to eligible industrial units in India. As part of its broad development role, IFCI has undertaken a wide range of promotional activities, some of its own and others jointly with other all-India financial institutions. The paid-up capital of the IFCI at the end of June 1988 stood at Rs 62.50 crore. Cumulatively at the end of June 1988, IFCI sanctioned and disbursed assistance aggregating Rs 5,303.63 crore and Rs 3,612.14 crore respectively. The net profit (provisional) of the IFCI for its working year 1987-88 (July-June) was Rs 48.22 crore.

INDUSTRIAL CREDIT AND INVESTMENT CORPORATION OF INDIA

The Industrial Credit and Investment Corporation of India (ICICI) was established in 1955 as a public limited company to encourage and assist industrial units in the country. It provides term loans in rupees and foreign currencies, underwrites issues of shares and debentures, makes direct subscriptions to these issues and guarantees payment for credit made by others. The paid-up capital of ICICI as at the end of March 1988 was Rs 80.85 crore. Cumulative project finance sanctions of ICICI up to the end of March 1988 amounted to Rs 6,154.59 crore. Disbursements until March 31 1988 totalled Rs 4,630.41 crore. The net profit earned by ICICI during the period 1 January 1987 to 31 March 1988 was Rs 77.12 crore.

INDUSTRIAL RECONSTRUCTION BANK OF INDIA

The Industrial Reconstruction Bank of India (IRBI) was set up as a statutory corporation on 20 March 1985 by reconstituting the erstwhile Industrial Reconstruction Corporation of India. The IRBI has been established as a principal institution to provide credit and investment needed for rehabilitation of sick industrial undertakings and for promotion of industries in general. Prevention and containment of industrial sickness are the main objectives of IRBI. The authorised capital of IRBI is Rs 200 crore and paid-up capital as on 30 June 1988, was Rs 98 crore. At the end of June 1988 the cumulative financial assistance sanctioned and disbursed stood at Rs 752.96 crore and Rs 526.24 crore respectively.

EXPORT-IMPORT BANK OF INDIA

Export-Import Bank of India (Exim Bank) is the principal financial institution in India for coordinating the working of institutions engaged in financing export and import trade. Exim Bank was established on 1 January 1982 for the purpose of financing, facilitating and promoting foreign trade of India. As on 31 December 1987, the paid-up capital of Exim Bank wholly subscribed by the Government of India stood at Rs 194.50 crore. Cumulative sanctions and utilisations of funded-assistance by Exim Bank as at the end of December 1987, were Rs 2,532.60 crore and Rs 2,241.5 crore respectively.' The corresponding figures of non-funded assistance extended by Exim Bank in the form of guarantees sanctioned and issued were Rs 435.60 crore and Rs 347.70 crore respectively. For the year ending December 1987, Exim Bank's net profit on account of general fund was 19.90 crore.

NABARD

National Bank for Agriculture and Rural Development (NABARD) came into existence on 12 July 1982. It took over the function of the erstwhile Agricultural Credit Department, Rural Planning and Credit Cell of the Reserve Bank of India and Agricultural Refinance and Development Corporation. Its subscribed and paid-up capital is Rs 100 crore, contributed by the Central government and RBI in equal proportions. NABARD was established for providing credit for the promotion of agriculture, small scale industries, cottage and village industries, handicrafts and other allied economic activities in rural areas with a view to promoting integrated rural development and securing prosperity of rural areas and for matters connected therewith or incidental thereto.

NABARD is an apex institution accredited with all matters concerning policy, planning and operations in the field of credit for agriculture and other economic activities in rural areas. It will (i) serve as an apex refinancing agency for the institutions providing investment and production credit for promoting various developmental activities in rural areas; (ii) take measures towards institution building for improving absorptive capacity of the credit delivery system, including monitoring, formulation of rehabilitation schemes, restructuring of credit institutions, training of personnel, etc.; (iii) coordinate rural financing activities of all the institutions engaged in developmental work at the field level and maintain liaison with Central government/state governments, RBI and other national institutions concerned with policy formulation, and (iv) undertake monitoring and evaluation of projects refinanced by it.

NABARD's refinance is available to state land development banks, state cooperative banks, scheduled commercial banks and regional rural banks. While the ultimate beneficiaries of investment credit can be individuals, partnership concerns, companies and state-owned corporations or cooperative societies, production credit is generally given to individuals.

Term credit disbursement of NABARD by way of refinance under scheme lendings reached a new peak of Rs 1,482 crore during 1986-87. The refinance commitments under new schemes approved during the year was Rs 2,037 crore as against Rs 1,483 crore during the previous year. Refinance provided for the implementation of the Integrated Rural Development Programme reached a new peak of Rs 448 crore.

INSURANCE

Insurance industry in India has taken remarkable strides towards its objectives. The growth of this industry was particularly marked after the First World War. When, in 1947, India attained independence, there were well over 200 Indian and non-Indian insurance and provident societies in the field.

Independence heralded the beginning of a new era of growth of insurance business in India, but the main watersheds were the nationalisation of life insurance business on 1 September 1956 and the nationalisation of general insurance business in January 1973. The major objective of nationalisation was achievement of wider spread of business more particularly in rural areas, so that the benefits of insurance should become available to an increasing number of persons and to all sectors of the economy. For this purpose, great emphasis has been laid on strengthening the field force to cater to the needs of different sections of the community. A progressive policy for establishment of more and more branch offices in rural and mofussil areas has also been adopted.

LIFE INSURANCE CORPORATION

Life Insurance Corporation of India (LIC) was established on 1 September 1956 to spread the message of life insurance in the country and to mobilise people's savings for nation building activities.

Prior to the nationalisation of insurance companies, 245 private insurers used to operate from 97 centres catering mostly to urban population and their total business in force stood at Rs 1,220 crore by the end of 1955. LIC with its central office in Bombay and five zonal offices at Bombay, Calcutta, Delhi, Madras and Kanpur operates through 58 divisional offices in important cities and 1,353 branch offices spread throughout the country. The Corporation also transacts business in foreign countries and has offices in Fiji, Mauritius and the United Kingdom. LIC is also associated with two joint ventures abroad in the field of insurance, namely, Kenindia Assurance Co. Ltd., Nairobi and United Oriental Assurance Ltd. at Kuala Lumpur, Malaysia.

In the financial year 1987-88, the Corporation had achieved the highest ever growth rate of 36.2 per cent in respect of new business. The other growth indicators regarding new policies issued during the year (22.5 per cent), new policies sold in rural areas (23.8 per cent) and premium income (27.4 per cent), are equally impressive. The total individual business in force as on 31 March 1988 amounted to Rs 59,671 crore under 325.41 lakh policies, out of which the rural portfolio represented 32.34 per cent in terms of business and 39.32 per cent in terms of number of policies. With 2.39 lakh agents, LIC has the largest field organisation in the country.

LIC's Group Insurance portfolio matched the progress in the individual business with a new business of Rs 13,751 crore under 5,693 schemes covering 25.26 lakh people displaying growth rates of 26.7 per cent, 44.6 per cent and 49.6 per cent respectively. Notable group schemes for weaker sections are for sweepers, weavers, rickshaw-pullers, construction workers, farmers, forest labourers, taxi-drivers, blind workers, fishermen, porters, etc. The schemes introduced recently by the LIC include *Jeevan Dhara* and *Jeevan Akshay* for pensioners and *Bima Niwas Yojana* for housing finance.

GENERAL INSURANCE CORPORATION

With the nationalisation of general insurance from 1 January 1973, the General Insurance Corporation (GIC) was set up as a holding company charged with the responsibility for aiding, assisting and advising the four subsidiary companies *viz.*, (1) National Insurance Co. Ltd., Calcutta (2) New India Assurance Co. Ltd., Bombay (3) Oriental Insurance Co. Ltd., New Delhi and (4) United India Insurance Co. Ltd., Madras.

The General Insurance Corporation does not transact any direct insurance business except aviation insurance mainly pertaining to Indian Airlines, Air India, International Airport Authority of India and Hindustan Aeronautics and crop insurance. The four subsidiary companies of the GIC operate on an all-India basis in competition with one another and transact all classes of insurance business through regional, divisional and branch offices. As compared to 799 offices in 1973, the network consisted of 3,489 offices at the end of 1987. The services of general insurance industry are now available all over the country; practically all districts have either an office or a development officer. The gross domestic premium of the industry amounted to Rs 1,565 crore in 1987 as compared to Rs 1,361 crore in 1986, representing a growth rate of 15 per cent. The general insurance industry operates directly through branches and agencies in 18 countries and through subsidiaries and associate companies in 13 countries spread over South-East Asia, West Asia, Africa, France, the UK, North America and the Caribbeans.

Besides striving to meet the sophisticated requirements of the organised trade and industry by covering complex risks such as satellites, oil rigs, petro-chemicals, thermal power projects, etc., the industry has devised non-traditional lines of business meant for economically weaker sections and rural areas. One of the major thrust areas for the benefit of rural population is insurance of cattle and live-stock like camels, sheep, goats, pigs, rabbits, poultry, ducks, quails, etc. Besides this, other insurance covers available for the benefit of weaker sections are—composite package insurance for beneficiaries of Integrated Rural Development Programme, National Rural Employment Programme etc., in respect of dwelling premises and other belongings; group personal accident cover for fishermen, toddy tappers, factory workers, etc; package policy for handloom

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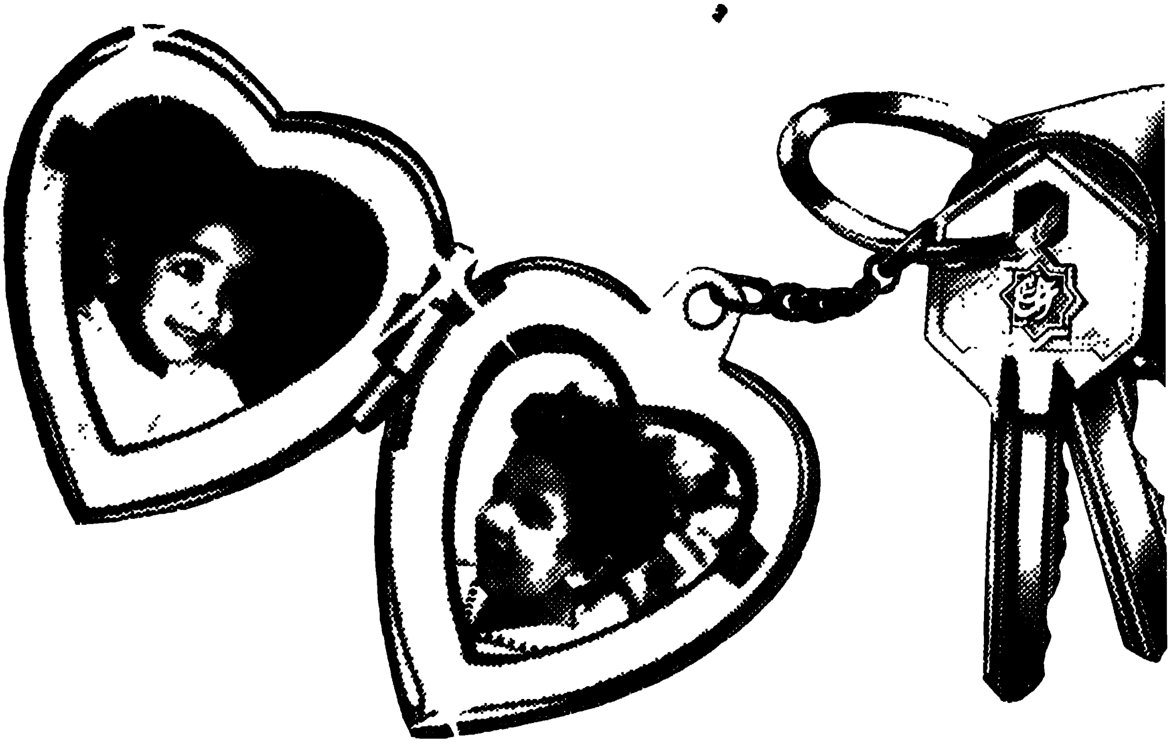

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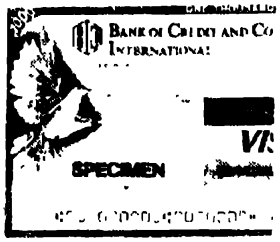

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Mr. B Natarajan, Manager, Foreign Exchange Department.

workers; cover for artisans, village, cottage and small scale industries including bio-gas plants; personal accident cover, namely, *Janata* and *Gramin;* agricultural pumpsets, failure of wells and pedal cycles, rickshaws, etc.

The personal accident insurance social security scheme designed to provide relief to poor families in the event of accidental death of their earning members, introduced in 1985, is presently being operated in 214 districts of the country and is proposed to be extended to the remaining districts gradually. Effective from 1 February 1988, the age limit for the purpose of the scheme has been increased from 55 years to 60 and the limit of family income has been enhanced from Rs 5,000 to Rs 7,200 per annum. The premium is funded by the Central government. A scheme to provide fire insurance cover for huts and belongings of landless labourers, small farmers, artisans and other poor people in rural areas, has been introduced from 1 May 1988 for a period of two years in the first instance. The scheme provides compensation up to Rs 1,000 for a hut and Rs 500 for belongings therein. The entire premium cost is being borne by the Central government.

A comprehensive crop insurance scheme has been introduced since 1985 linking crop loans disbursed by cooperative credit institutions, commercial and rural banks with an in-built insurance cover. The scheme is operated in states which have accepted the scheme for all crop loans given in notified areas for cultivation of rice, wheat, millets, oil seeds and pulses which constitute the major crops in the country. Area-approach for determining threshold expected yield based on last few years' statistics and actual yield determined on the basis of crop cutting experiments, has been adopted. The premium has been standardised at the flat rate of two per cent of the sum insured for rice, wheat and millets and one per cent for oil seeds and pulses irrespective of the high, medium and low-risk areas. For small and marginal farmers, the premium is subsidised by the Government to the extent of 50 per cent. The risk is shared to the extent of 33 1/3 per cent by participating state governments and 66 2/3 per cent by the Central government. The scheme is administered by the GIC. The Corporation has opened offices in various state capitals and union territories to maintain close liaison and provide service to state cooperative banks; commercial banks and rural banks for smooth implementation of the scheme.

Several covers for providing insurance protection to urban population have also been developed such as householders'/shopkeepers' comprehensive policy for various risks, a simplified personal accident policy, professional indemnity insurance for professionals like doctors, chartered accountants, solicitors, architects, etc., and cancer medical insurance. A medical insurance scheme for Indians going abroad for official and business purposes has been introduced in cooperation with Mercury Insurance Services Ltd., UK and Travel Insurance Management, London. The scheme covers holiday visits for a maximum period of 120 days to all countries excluding USA and Canada and for a period of 60 days to all countries including USA and Canada. A modified medical insurance scheme for the benefit of general public under the brand name MEDICLAIM has been introduced from 3 November 1986. Under this scheme, premium up to Rs 3,000 is eligible for tax deduction under Section 80 (D) of the Income Tax (Amendment) Act. 1986.

Following the Bhopal gas tragedy, there has been an increased awareness of the public liability insurance and the industry has devised public liability policy for covering industrial accidents and pollution liability to suit the requirement of insuring institutions. Besides, the industry has also devised product liability cover for domestic products as well as for export products. A cover for loss or damage caused by the acts of terrorism in conjunction with the cover for riot, strikes and malicious damage, has been introduced from 1 January 1987. A major portion of investible funds of the industry is channelised into socially-oriented sectors of the economy. The gross domestic premium of the industry amounted to Rs 1,565 crore in 1987 as compared to Rs 1,361 crore in 1986, representing a growth rate of 15 per cent. The capital and funds of the industry as on 31 December 1987, amounted to Rs 1,973 crore.

The insurance industry is supporting the Loss Prevention Association of India Ltd., which is active in the promotion of loss prevention in various fields in the country.

The insurance companies have their own full-fledged training colleges with residential facilities, modern audio-visual aids and well equipped library. A vocational course in general insurance subjects at senior secondary schools has been introduced in collaboration with Central Board of Secondary Education in 20 selected schools located in six major cities as a pilot project from the academic year, June 1988. The scheme provides for job opportunities in the industry to those passing the course with 50 per cent marks. The aim is to delink degree qualifications from jobs.

INVESTMENT

FOREIGN INVESTMENT POLICY

The Government welcomes foreign investment in desirable areas, to supplement the capital resources and knowhow for rapid industrial development. Its policy towards foreign investment is selective and aims at stimulating industrial growth through induction of advanced technology and at promoting exports. Foreign capital is not permitted in the field of banking, commerce, finance, plantation, trading and consumer industries although in special financial services, selective entry is considered. The normal limit for foreign equity participation is 40 per cent which is relaxable on merits in individual cases, the main considerations being technology and exports. Within the broad framework of the selective policy, a process of consultation and dialogue on a continuing basis has been initiated with major capital and knowhow exporting countries to identify and smoothen out bottlenecks in the way of larger inflow of direct foreign investment. Within the given policy framework, foreign equity is welcome in joint ventures as a means to establishing long-term relationships, which would result in greater inflow and better absorption of technology and as a means to meeting some of the foreign exchange requirements of the joint ventures. Certain liberalised facilities for investment in India have also been made available to investors from oil exporting developing countries and non-resident Indians.

Recently, the Government has set up two inter-ministerial committees, one each for Japanese and FRG investments in India, in the Department of Economic Affairs, Ministry of Finance. Other members are from the Ministry of Industries and the Ministry of External Affairs. These committees also invite representatives of the embassies, trade and industries of Japan and FRG, for its meeting, to deliberate on the procedural or policy-related bottlenecks and how they can be removed to improve the investment climate.

FACILITIES FOR INVESTMENT IN INDIA FOR NRIs

The NRI investment facilities were announced at the time of presentation of the Union Budget for 1982-83. Since then the scheme has been under constant review and further liberalised wherever necessary. During the year 1986-87, it was decided to permit NRI investment on repatriation basis in medical diagnostic centres, sick industrial units, shipping industry and in oil exploration services. The procedures for investment were also further simplified. Some of the sequential approvals required under Industrial (Development & Regulation) Act and FERA were clubbed together and a system of simultaneous approval devised to provide quick clearance to the industrial proposals emanating from NRIs.

UNIT TRUST OF INDIA

The Unit Trust of India (UTI) was established in 1964 as a public sector investment institution for mobilising the savings of the community and channelling them into productive corporate investment so as to provide for the growth and diversification of the economy. To achieve this, the UTI sells units in the denomination of Rs 10 and Rs 100 to the investing public to provide an opportunity, particularly to those belonging to small and medium income groups, indirectly to participate in the ownership of shares and debentures of joint stock companies. It has formulated various schemes from time to time to cater to the specific investment needs of different types of investors.

The UTI has several schemes for mobilising savings of the community. The main scheme of the UTI is the Unit Scheme 1964. The UTI in association with Merrill Lynch has floated the India Growth Fund in August 1988 in the USA and other countries for providing an opportunity for non-resident Indians and persons of Indian origin residing abroad and other persons residing outside India to invest in the securities market of India. The UTI has also set up a Mutual Fund in September 1986 under which *Master Shares* have been offered for public subscription. The Mutual Fund has been set up in order to provide a channel for small investors for investing in shares quoted in the stock exchanges.

STOCK EXCHANGE

The stock exchanges play a crucial role in the mobilisation of resources for the corporate sector. They provide an organised market for transactions in securities.

There are 16 stock exchanges in the country recognised under the Securities Contracts (Regulation) Act, 1956. These are located at Bombay, Calcutta, Madras, Delhi, Ahmadabad, Ludhiana, Kanpur, Jaipur, Indore, Pune, Hyderabad, Bangalore, Cochin, Guwahati, Mangalore and Patna. While stock exchanges are being administered by their governing boards and the executive chiefs, policies relating to their regulation and control are laid down by the Ministry of Finance. The Government has also constituted the Securities and Exchange Board of India (SEBI) in April 1988 for the orderly development and regulation of the securities industry and stock exchanges.

MINTS AND PRESSES

The Indian Security Press, Nasik Road, consists of two units—Stamp Press and Central Stamp Depot. The Stamp Press prints postal stationery, postal and non-postal and impressed stamps, judicial and non-judicial stamps, cheques, bonds and other security documents, besides a number of miscellaneous items of security required by the Central and state governments and quasi-government organisations. The Central Stamp Depot distributes the finished products made by the Stamp Press to various indentors. The Currency Note Press, Nasik Road, prints and supplies currency notes of one rupees and bank notes of rupee two, five and ten denominations. The Security Paper Mills, Hoshangabad manufactures paper for making currency notes and other security paper. The Bank Note Press, Dewas, consists of two production units, *viz.*, the main press for printing bank notes of the denominations of Rs 20,50 and 100 and the ink factory for the manufacture of security inks. The Security Printing Press, Hyderabad prints postal stationery and other security forms.

The mints at Bombay, Calcutta and Hyderabad mint coins to meet the country's requirements. The Bombay Mint being the only gold refinery in the country, undertakes refining of gold for licensed gold dealers and production of medals for defence services, institutions, etc. The Mint also manufactures working standards of weights and measures for various states. The Calcutta and Hyderabad Mints, besides minting coins, manufacture medals for various government departments. Towards modernising the mints, 24 new coining presses have been installed in these mints. A fourth mint with an annual capacity of 200 crore of coins has been established at NOIDA, UP. The other three mints are also being modernised with a view to increasing production.

EXPENDITURE

AUDIT AND ACCOUNTS

In 1976-77, a major reform was introduced in the financial and accounts administration of the country. The departmentalised system of accounts was adopted in all the Central ministries and departments. The Comptroller and Auditor General was relieved, in phases, of the responsibility of compiling the accounts of all Central ministries and departments. The reform was introduced to facilitate effective monitoring and control over receipt and expenditure of the Central government and to make available timely flow of information on the progress of expenditure of development projects.

In the states and union territories (except union territories of Delhi, Andaman and Nicobar Islands, Pondicherry and Daman and Diu) where accounts have not been separated from Audit, the Comptroller and Auditor General continues to maintain the accounts and audits them also. The accounts along with the annual reports prepared by the Comptroller and Auditor General are submitted to the respective government who causes them to be laid before the legisatures.

CONTROLLER GENERAL OF ACCOUNTS

The organisation of the Controller General of Accounts (CGA) was set up as a part of the Ministry of Finance, Department of Expenditure in October 1976 to administer matters pertaining to the departmentalisation of accounts of the Union Government. These include prescribing the form of accounts relating to Union and state governments; laying down of accounting procedures, framing and revising rules and manuals relating thereto; overseeing the maintenance of adquate standards of accounting by Central (Civil) Accounts Offices; consolidation of the monthly and annual accounts of the Government of India (including preparation of summary civil appropriation account), and the administration of rules under Article 283 of the Constitution relating to the custody, etc., of the Consolidated Fund of India, the Contingency Fund of India and the money credited to Public Account.

The CGA prepares the condensed form of the appropriation accounts (civil) and the finance accounts of the Union Government. These after audit by the Comptroller and Auditor General are placed on the table of both the Houses of Parliament along with the report from the latter.

After the departmentalisation of accounts, pay and accounts offices attached to ministries/authorities compile their respective accounts manually and send them in pre-printed booklets to the office of the CGA where they are consolidated through a computer of the National Informatics Centre (NIC). The consolidated Central civil accounts, the consolidated Central government accounts (incorporating accounts of Railways, P&T and Defence) as also the accounts of the each ministry/department, are prepared.

Controller General of Accounts office is also responsible for administering the scheme for payment of pension to Central government civil pensioners by public sector banks and for prescribing procedure for payment to civil pensioners.

FINANCE COMMISSION

Under the Constitution, Finance Commission is to be constituted every fifth year or earlier it is thought necessary to make recommendations to the President as to (i) the distribution between the Union and the states, of the net proceeds of taxes which are to be, or may be, divided between them and the allocation between the states, of the respective shares of such proceeds; (ii) the principles which should govern the grants-in-aid of the revenues of the states in need of such assistance out of the Consolidated Fund of India, and (iii) any other matter referred to the Commission by the President in the interest of sound finance. The recommendations of the Commission together with an explanatory memorandum as to the action taken thereon are laid before each House of Parliament. So far nine Finance Commissions have been constituted since the commencement of the Constitution.

The Ninth Finance Commission constituted under Article 280 of the Constitution submitted its first report for 1989-90 to the President on 29 July 1988. Government accepted the recommendations of the Commission regarding devolution of Income Tax, Union Excise Duties, additional duties of Excise in lieu of Sales Tax, grants in lieu of tax on Railway passenger fares, financing of relief expenditure and debt relief. In regard to grants-in-aid, the Government accepted the recommendation of the Commission with the proviso that the recommendation relating to grants-in-aid for meeting the requirements of the revenue component of the state plan may be kept in view by the Planning Commission while finalising the funding arrangements for the Annual Plans of the states for 1989-90. The report along with an 'Explanatory Memorandum' on the action taken on the recommendations contained therein was placed on the table of the Lok Sabha on 2 September 1988.

The Ninth Finance Commission has estimated the total amount of transfer of resources to the states in 1989-90 on the basis of its recommendations at Rs 13,662.42 crore—Rs 11,785.64 crore by way of tax devolution and Rs 1,876.78 crore by way of grants. Besides, the Commission has recommended relief of Rs 184.98 crore in repayment of principal and Rs 236.75 crore in interest payment in 1989-90 in respect of drought loans to some states and special loans to Punjab. Follow-up action in respect of the recommendations of the Ninth Finance Commission, is underway.

REVENUE

Through the tax laws and their administration, the Department of Revenue seeks to achieve three main objectives, namely, to build up an atmosphere of mutual trust between the tax gatherers and the tax payers, to tackle the problems of tax evasion and to reduce the tax arrears and also to give incentives by suitable legislation in furtherance of the socio-economic policies.

DIRECT TAXES

Direct taxes play a significant role in the tax system not only as a revenue source, but as a powerful instrument for achieving objectives of social and economic policy. First, direct taxes help to make the tax system progressive and progressiveness is considered desirable in the interest of equity and for reducing the disparities in the distribution of income and wealth. Secondly, direct taxes subserve the strategy of planning in many ways. Differential taxation of savings in specified assets helps to promote savings and induce the flow of investment into desirable channels. In India, both income tax as well as taxes on capital are designed to serve these objectives.

Presently, the Income Tax Department administers these direct tax Acts: Income Tax Act, 1961, Wealth Tax Act, 1957, Gift Tax Act, 1958, Estate Duty Act, 1953 (discontinued in respect of death on or after 16 March 1985), Companies (Profit) Surtax Act, 1964 (discontinued from 1 April 1988), Hotel Receipts Tax Act, 1980 (levy discontinued from 28 February 1982) and Expenditure Tax Act, 1987.

Table 13.7 gives the figures of revenue collection under various major direct taxes and table 13.8 shows incidence of income tax at selected levels.

TABLE 13.7 DIRECT TAXES

(Rs crore)

Taxes	Amount of Revenue Collected			
	1985-86	1986-87	1987-88	1988-89
1. Corporation Tax	2,583.64	3,159.96	3,433.00	4,313.94
2. Income Tax	2,795.59	2,878.05	3,187.00	4,206.06
3. Taxes on Wealth	153.00	174.15	100.58[1]	115.06[1]
4. Estate Duty	21.96	13.39	8.02	6.11[1]
5. Gift Tax	12.0	9.26	8.23[1]	5.59[1]
6. Expenditure Tax[2]	—	—	5.69[1]	36.58[1]

[1] Provisional figures

[2] Expenditure Tax was introduced from 1 November 1987.

COMBATING TAX EVASION

To check tax evasion and curb generation of black money, legislative, administrative and institutional measures are taken from time to time. Along with the policy of encouraging voluntary compliance, the Government has taken punitive action against tax evaders. Systematic survey, search and seizure in appropriate cases and deep scrutiny at the time of assessment are undertaken by the Department to detect tax evasion which also serve as deterrent to other evaders.

During 1988-89, the Income Tax Department conducted searches which resulted in the seizure of unaccounted assets worth Rs 152.70 crore. The

TABLE 13.8 INCIDENCE OF INCOME TAX AT SELECTED LEVELS

Net Income (Rs)	Tax (including surcharge)	Effective rate (per cent)
18,000	NIL	NIL
20,000	500	2.5
25,000	1750	7.00
30,000	3,250	10.83
40,000	6,250	15.63
50,000	9,250	18.50
60,000	13,912.50	23.10
70,000	18,112.50	25.80
80,000	22,312 50	27.89
90,000	26,512.50	29.45
1,00,000	30,712.50	30.71
1,50,000	56,962.50	37.97
2,00,000	83,212.50	41.60
3,00,000	1,35,712.50	45.24
4,00,000	1,88,212.50	47.00
5,00,000	2,40,712.50	48.14
10,00,000	5,03,212.50	50.32

corresponding figure for 1987-88 was Rs 145.02 crore. Door-to-door survey of business premises was also carried out at 6,61,644 places. As a result of the various measures taken, 4,11,706 new assesses were brought on the records of the Department. The number of prosecutions against tax offenders were also stepped up. Accordingly in 1987-88, 7,361 prosecutions were launched, as against 5,258 in 1987-88.

INDIRECT TAXES

The Customs and Central Excise Duties are the important sources of Central government revenue. These account for about 80 per cent of the total revenue of the Union. Table 13.9 gives collection of figures in respect of Customs and Central Excise Duties during the last three years.

TABLE 13.9 REVENUE FROM EXCISE AND CUSTOMS

(Rs crore)

	1985-86	1986-87	1987-88	1988-89 (BE)
Union Excise duties	12,956.00	14,407.29	16,552.58	18,138.00
Customs duties	9,526.00	11,470.72	13,635.75	15,561.00

The taxation measures undertaken during the recent years intend to achieve reforms in the structure of Customs and Excise Duties and are designed to further the basic objectives of economic growth, equity, simplicity and built-in revenue raising capacity. One of the measures of reforms in the system of indirect taxes was the bringing into force of new tariffs for Customs and Central Excise, based on the Harmonised Commodity Description and Coding system.

As provided in the long-term Fiscal Policy, a Modified System of Value Added Tax (MODVAT) was introduced in the Excise Tariff Structure to minimise the cascading effect of excise duties in respect of exciseable goods falling under 38 chapters of the Central Excise Tariff during 1986-87. This scheme has now been extended to the remaining chapters other than those relating to textiles, tobacco, matches and petroleum sectors.

During the years 1987 and 1988, the tempo of action against evasion of Central Excise duty has been further accelerated. Sustained efforts against tax evaders have resulted in detection of 6,663 cases in 1987 and 4,333 cases in 1988 (up to October 1988) involving estimated evasion of Central Excise duty of Rs 1,198.72 crore and 297.77 crore respectively. During 1987, 128 and in 1988 (up to October), 90 prosecutions had been launched against evaders of Central Excise duty.

SALES TAX

Sales tax is the most important source of revenue of the states. Levy of taxes on the sale or purchase of goods taking place within a state is a state subject of taxation. The administration of Central Sales Tax Act, 1956, under which tax is levied on inter-state sale of goods, has been entrusted by law to the state governments who collect and retain the proceeds of such tax.

The total collection of sales tax covering central sales tax, general sales tax, tax on motor spirit and purchase tax on sugarcane during the year 1987-88 is estimated at Rs 10,766 crore approximately. The total collection of additional excise duty in lieu of sales tax for 1988-89 on sugar, tobacco and textile is estimated at Rs 1,366 crore.

SMUGGLERS AND FOREIGN EXCHANGE MANIPULATORS

Smugglers and Foreign Exchange Manipulators (Forfeiture of Property) Act, 1976 provides for forfeiture of illegally acquired properties of smugglers and foreign exchange manipulators, their relatives and associates. The Act is implemented by five competent authorities with their headquarters at Delhi, Bombay, Calcutta, Madras and Ahmadabad. Up to 31 July 1988 proceedings under the Act had been initiated in 2,999 cases including 1,935 cases in which suitable orders have been made.

ANTI-SMUGGLING DRIVES

The drive against smuggling, tax evasion and other economic offences includes, among others, strengthening of the existing intelligence network against smugglers and their activities, improving the surveillance and surprise checks of vulnerable areas, giving special attention to the post-seizure operations such as adjudication, disposal of confiscated goods and prosecutions, etc. The Narcotic Control Bureau, a separate authority was also created during 1986 for coordinating the efforts in preventing and combating trafficking in narcotic drugs and psychotropic substances. The Government has also initiated steps to curb open display and sale of goods of foreign origin.

In addition to the tackling of out-right smuggling of contraband goods, the customs authorities took strict action against certain companies in organised sector indulging in tax evasion, import-export frauds, misuse of duty exemption scheme, evasion of customs/excise duty and foreign exchange violations. As a result of various anti-smuggling measures taken, goods worth Rs 250.02 crore during 1987 and worth Rs 354 crore during 1988 (up to November) were seized.

POPPY CULTIVATION AND OTHER NARCOTIC DRUGS AND PSYCHOTROPIC SUBSTANCES

India is the largest producer and exporter of opium in the world. Cultivation of poppy, production and export of opium are under the exclusive control of the Government of India. India has been facing the problem of trafficking in illicit drugs which has been escalating over the years. The spill-over from such trafficking has been causing problems of abuse and addiction. There have been indications that this trend has created demand for drugs illicitly and this may also lead to increased diversion of opium from licit growing areas of opium poppy. A number of legislative, administrative and preventive measures have been taken by the Government from time to time to curb illicit trafficking in drugs. During 1988 (up to June), 1,372 kg opium, four kg morphine, 1,708 kg heroin, 15,469 kg ganja, 12,258 kg charas (hashish), 17 kg cocaine and 534 kg methanqualone were seized by various drug law enforcement agencies.

With a view to supplementing the deterrent penal provisions of the Narcotic Drugs and Psychotropic Substances Act, 1985, for immobilisation of persons connected with drug trafficking, the Prevention of Illicit Traffic in Narcotic Drugs and Psychotropic Substances Ordinance, 1988 (No. 7 of 1988) was promulgated by the President of India on 4 July 1988. The maximum period of detention provided under the ordinance is for one year, while in cases where drug trafficking operations are in areas categorised as 'highly vulnerable', the detention would be for two years.

Close liaison and cooperation are maintained with the international bodies like INTERPOL/ICPO, Customs Cooperation Council, International Narcotics Control Board, United Nations Division of Narcotic Drugs, etc., to curb narco-terrorism.

GOLD CONTROL

Gold control is administered under the Gold (Control) Act, 1968 and the rules and regulations made thereunder. The Gold Control Administrator is also an

Additional Secretary to the Government of India in the Ministry of Finance. The Administration has a regional office at Bombay. The Gold (Control) Act is implemented through various collectors of Central Excise and Customs.

The gold trade is regulated by a system of licensing of dealers and certification of goldsmiths and through maintenance of prescribed accounts and submission of returns.

There are two mines in the country, which produce gold, namely, Bharat Gold Mines Limited (BGML) and Hutti Gold Mines Limited (HGML). Till recently, the entire quantity of gold produced by the Bharat Gold Mines was acquired by the Government. Recently, the Government has permitted the BGML to sell its gold in the domestic market to licensed gold dealers through four main branches of the State Bank of India at Bombay, Calcutta, Delhi and Madras. The production from the Hutti Mines is sold to industrial users of gold at the prevailing Bombay market price against permits issued by the regional office. In addition, some quantity of gold is produced as a by-product by the Hindustan Copper Limited which is also taken over by the Government.

CORPORATE SECTOR

The first company legislation in India was an Act for the registration of joint stock companies enacted in the year 1850. This was followed by the Companies Act, 1913. As a result of the recommendations of the Committee under the Chairmanship of Shri CH Bhabha to make suggestions for Company Law Reform, the Companies Act, 1956 was enacted as a Central legislation. Prior to the enactment of this Act, the administration of the companies legislation was the responsibility of the state governments.

The Companies Act, 1956, has been in force for the last 33 years and during this period it has been amended over 16 times. The amendments of 1969, 1974, 1977 and 1988 are of special importance. By the amendment of 1969, the system of appointing managing agencies or secretaries or treasurers in companies was abolished. Under the 1974 amendment, the powers of the High Court relating to certain sections of the Companies Act were transferred to the Company Law Board. The scope of section 43A was enlarged so as to treat large private limited companies as deemed public limited companies. A new section 58A was inserted to regulate acceptance of deposits by the companies. Section 108A to section 108H were introduced to check take-over bids by large groups (these sections have since been transferred to the Monopolies & Restrictive Trade Practices Act, 1969). The 1977 amendment inserted, *inter alia,* section 634A enabling the Company Law Board to enforce its orders under sections 17, 18, 19, 79, 141, and 186 of the Act as a decree of a court of law. The Companies Act, 1956, provides a variety of powers to the Central government and the Company Law Board to monitor, regulate and control the affairs of the companies. The salient features of the 1988 amendments are: (a) the setting up of an independent Company Law Board to exercise such judicial and quasi-judicial functions as are presently being exercised either by the Court or the Central Government and proposed to be transferred to that Board; (b) compounding of offence punishable with fine; (c) dispensing with Government approval for managerial appointments and remuneration, subject to the fulfilment of certain statutory guidelines which are proposed to be incorporated in the Act itself; (d) de-linking of the rates of depreciation from the rates specified under the Income Tax Act and laying down the rates of depreciation in the Act itself to reflect the true and fair view of the state of affairs of the company; (e) protecting the interest of the investors by providing for intervention by the Company Law Board against non-payment of public deposits, compulsory redemption of preference shares in certain cases, requiring companies to disclose reasons for refusal to register transfer of shares, protecting the rights of the transferee pending mutation of his name in the register of members, and also compulsory listing of all public issues; (f) reducing unnecessary cost or burden by requiring companies to attach only an abridged form of prospectus to the application form and only an abridged version of balance sheets and auditors' report to members and also by requiring companies to hold a poll in general meeting, only at the instance of the shareholders having some minimum stake in the company, and further requiring companies to file full annual return only once in six years, and (g) provision for disclosure of information relating to conservation of energy, technology absorption, foreign exchange earnings and outgo as well as particulars of employees having some minimum stake in the company and drawing remuneration in excess of that drawn by managerial personnel.

The number of joint stock companies, both government and non-government, incorporated under the Companies Act, 1956 and at work in India as on 31 March 1988 was 1,57,737. Of these, 1,55,549 companies were limited by shares, 309 with unlimited liability and 1,879 were limited by guarantee or were associations not for profit. The 1,55,549 companies limited by shares had a paid-up capital of Rs 46,447 crore. These comprised 18,459 public limited companies and 1,37,090 private limited companies with paid-up capital of Rs 17,947 crore and Rs 28,500 crore respectively.

Table 13.10 shows the number of companies and paid-up capital (government and non-government taken together).

NEW REGISTRATIONS

During 1987-88, 17,652 companies were registered under the Companies Act. These included 21 government companies and 17,557 non-government companies with liability limited by shares, 10 non-government companies with unlimited liability and 64 non-government companies with liability limited by guarantee and associations not for profit. Of the 17,578 companies limited by shares registered during the year, 953 were public limited companies with an aggregate authorised capital of Rs 4,906 crore and 16,625 were private limited companies with an aggregate authorised capital of Rs 1,491 crore.

TABLE 13.10 COMPANIES AT WORK

As on 31 March	Companies Limited by Shares						Companies with unlimited liability (Number)	Companies Limited by guarantee and associations not for profit (Number)
	Public Limited		Private Limited		Total			
	Number	Paid-up capital (Rs crore)	Number	Paid-up capital (Rs crore)	Number	Paid-up capital (Rs crore)		
1951	12,568	566.5	15,964	208.9	28,532	775.4	—	1,213
1961	6,702	948.2	19,447	870.3	26,149	1,818.5	—	1,169
1971	6,690	2,091.5	23,632	2,422.2	30,322	4,513.7	—	1,220
1981	9,740	4,645.5	52,974	10,090.0	62,714	16,356.7	176	1,478
1982	10,543	6,267.0	61,859	12,668.5	72,402	18,935.5	219	1,496
1983	11,782	7,470.3	71,121	15,586.0	82,903	23,056.3	252	1,536
1984	12,950	8,430.0	81,314	18,070.4	94,264	26,500.4	282	1,598
1985	14,568	9,888.5[1]	92,801	20,197.9[1]	1,07,369	30,086.4[1]	295	1,677
1986	16,125	11,776.7[1]	1,06,034	23,907.5[1]	1,22,159	35,684.2[1]	298	1,739
1987	17,551	16,131.1[1]	1,20,635	26,692.8[1]	1,38,186	42,829.9[1]	299	1,817
1988	18,459	17,947.4[1]	1,37,090	28,499.5[1]	1,55,549	46,446.9[1]	309	1,879

[1] Provisional

During April-December 1988, 16,157 companies were registered. Of these 19 were Government companies and 16,138 non-government companies with an authorised capital of Rs 2,315 crore and Rs 1,668 crore respectively. The Government companies consisted of seven public limited and 12 private limited companies having an authorised capital of Rs 1,243 crore and Rs 1,072 crore respectively. The non-government companies comprised 715 public limited and 15,363 private limited companies having authorised capital of Rs 447 crore and Rs 1,221 crore respectively.

CAPITAL ISSUES

Section 60 of the Companies Act requires that prospectus issued by or on behalf of the companies or in relation to an intended company, inviting offers from the public for the subscription or purchase of any shares or debentures be delivered to the registrars of companies for registration. Section 67(3) provides that if the offer or invitation can properly be regarded as not being calculated to result, directly or indirectly in the shares or debentures becoming available for subscription or purchase by persons other than those receiving the offer or invitation, or otherwise as being a domestic concern of the persons making and receiving the offer or invitation, such offer or invitation shall not be treated as made to the public. Thus, prospectus for issue of shares or debentures by private placement are not required to be registered with the registrars. During the year ended 31 March 1988, 119 non-government, non-financial public limited companies delivered copies of prospectus to the registrars of companies for registration under section 60 of the Act for raising an amount of Rs 563 crore from public as against 385 prospectus delivered by the companies in the previous year for raising Rs 1,269 crore. Of the 119 companies which issued prospectus during 1987-88, 102 companies (85.7 per cent) invited applications for equity share capital. The remaining 17 companies invited applications for equity share capital as well as debentures (12) or for debentures only (5). The issue of debentures related to convertible debentures (5) and equity-linked convertible debentures (12). Of the total amount of Rs 563 crore issued through the prospectus during 1987-88, Rs 355 crore (63.1 per cent) was in respect of equity shares and the balance of Rs 208 crore (36.9 per cent) for debentures. Capital amounting to Rs 316 crore or 56.1 per cent of the total amount covered by the prospectus, was offered to the public and balance of Rs 247 crore or 43.9 per cent was earmarked for firm allotment to the promoters, directors, existing shareholders and employees of the company, non-resident Indians, financial insitutions, banks and state industrial corporations. While directors, promoters and their relatives accounted for 17.4 per cent of the amount earmarked for firm allotment, non-resident Indians accounted for 23.1 per cent, shareholders for 35.6 per cent and financial institutions and state industrial corporations for 20.6 per cent.

COMPANIES WHICH CEASED TO WORK

During 1987-88, 208 companies went into liquidation or otherwise became defunct or ceased to work and were struck off under section 560(5) of the Companies Act, 1956. The comparative figures for some of the earlier years were: 1970-71 (472), 1980-81 (391), 1985-86 (263) and 1986-87 (281).

GOVERNMENT COMPANIES

Table 13.11 gives the number and paid-up capital of government companies at work for selected years.

FOREIGN COMPANIES

As on 31 December 1988, there were 414 foreign companies in India as defined under section 591 of the Companies Act, 1956. The distribution of these companies according to their country of origin was UK 125, USA 83, Japan 37, France 14, West Germany 11, Italy 10, Canada 7, Hong Kong 10, Pakistan 5, Bangladesh 5, Netherlands 6, Switzerland 4, Sweden 4, Australia 4, Panama 9, Belgium 4, Thailand 3, Nepal 3, UAE 3 and others 52.

ECONOMIC ROUND-UP

The Economic Survey for 1988-89 observes that the economy has recorded high growth during 1988-89 after recovering quickly from the adverse effects of drought experienced during the previous year. The annual inflation rate, which had exceeded 10 per cent at the end of March 1988, had been brought down to around 5 per cent by January 1989. On the external front, export growth had been running at over 24 per cent up to December 1988 in rupee terms. Despite this, the trade deficit has increased since imports have grown even faster.

During 1988-89, industrial production recorded strong growth from the beginning of the year and the annualised growth rate was over nine per cent up to November 1988. High industrial growth for the fifth year in succession reflects the positive effects of an on-going process of industrial policy reforms aimed at promoting competitiveness, better capacity utilisation and 'cost efficient' in the industrial sector. A number of such policy initiatives have been undertaken during the past year. Some of these new measures will facilitate expansion of production within existing capacity while others are directed at encouraging the creation of new capacities. Important steps have also been taken to simplify the administration of industrial policy and eliminate procedural impediments.

Strong industrial growth during the current year has also been supported by the good performance of key infrastructure sectors such as coal, steel, cement, fertilisers, railways and power generation. Within the power sector, growth in thermal generation has decelerated this year mainly on account of the preponement of planned maintenance shut-down and backing down of some thermal plants.

The containment of inflation during the past two-years has been possible

TABLE 13.11 GOVERNMENT COMPANIES AT WORK

As on 31 March	Public Limited		Private Limited		Total	
	Number	Paid-up capital (Rs crore)	Number	Paid-up capital (Rs crore)	Number	Paid-up capital (Rs crore)
1957	39	18.9	35	53.7	74	72.6
1962	41	23.5	113	606.2	154	629.7
1967	65	77.1	167	1,314.4	232	1,391.5
1972	107	156.0	245	2,213.1	352	2,369.1
1977	273	591.9	428	6,582.6	701	7,174.5
1982	374	2,183.9	520	11,125.4	894	13,309.3
1983	411	2,827.4	532	13,907.5	943	16,734.9
1984	427	3,315.6	546	16,195.0	973	19,510.6
1985	419	4,247.7	561	18,199.3	980	22,447.0
1986	443	5,356.0	577	21,731.8	1,020	27,087.8
1987	450	8,627.3	603	24,245.4	1,053	32,872.7
1988	474	10,188.9[1]	630	25,842.3[1]	1,104	36,031.2[1]

[1] Provisional

mainly on account of timely introduction of a range of anti-inflationary measures during the previous year. On the demand side, these included a whole range of steps aimed at financing the relief measures without allowing any undue increase in the budget deficit. This facilitated the implementation of a policy of restrained money supply growth. On the supply side, Government ensured adequate availability of foodgrains and other essential commodities through a vastly expanded public distribution system, the various employment programmes and relief operations.

According to survey, fiscal management during 1988-89 has been directed at restoring the momentum of growth in a post-drought year and reinforcing the priority given to exports. Important fiscal measures such as concessions to agriculture-based activities, re-introduction of investment allowance, duty relief in selected industries and further incentives for export growth have all been directed at these two objectives. Restoring growth also served as a guiding principle for overall financial management during the year. Thus, Central Plan outlay in the Budget Estimates for 1988-89 was stepped up by over 17 per cent as compared to 1987-88, ensuring for the first time that four-fifth of targetted Central Plan expenditure in real terms has been incurred within first four years of the Plan. At the same time budgetary support for the Plan has been reduced from over 61 per cent in 1987-88 to around 56 per cent in 1988-89. The corresponding requirement of resource contribution by public enterprises has been stepped up from 39 per cent of Plan Outlay to over 44 per cent.

The balance of payment situation remained difficult during the year. The pressures rising from several adverse medium term factors discussed in earlier Economic Surveys were aggravated by a surge in the import bill during 1988-89. Policy measures adopted to promote exports have yielded good results during the last two years. The rupee value of exports increased by over 24 per cent up to December 1988, compared to the corresponding period last year, on top of an estimated increase of over 26 per cent recorded during 1987-88.

The Survey draws attention to the need for more effective action to tackle the linked problems of the balance of payment deficit and budgetary imbalances in order to ensure strong, non-inflationary growth in the Eighth Plan. Imbalances in the domestic fiscal situation affect the prospects for growth, price stability as well as external balance. A turn-around in public savings performance is crucial for financing the levels of public investment necessary for continuation of strong economic growth. This turn-around must come from both an improvement in the budgetary deficits of the Central and state governments as well as increased surplus generation by public sector enterprises.

Government has been attaching high priority to the promotion of export growth in order to relieve the external payer constraint. The series of measures undertaken in recent years have yielded positive results. Exports grew by around 10 per cent in volume terms in both 1986-87 and 1987-88. During the current year, exports grew by over 24 per cent in rupee terms or over 30 per cent in US dollar terms during April-December, 1988, compared to the same period last year.

14 Planning

PLANNING in India derives its objectives and social premises from the Directive Principles of State Policy set forth in the Constitution. The public and private sectors of the economy are viewed as complementary. The private sector covers not only organised industry but also small scale industries, agriculture, trade and a great deal of activity in housing, construction and other fields. Individual effort and private initiative are considered both necessary and desirable,the policy being to assist development on the basis of voluntary cooperation to the utmost extent. Economic planning also envisages a growing public sector with massive investments in basic and heavy industries.

Planning Commission was set up in 1950 to prepare the blue-print of development, taking an overall view of the needs and resources of the country. The composition of the Commission on 1 December 1988 was as follows:

Rajiv Gandhi : *Prime Minister and Chairman*
Madhavsinh Solanki : *Minister of Planning, Programme Implementation and Deputy Chairman*
SB Chavan : *Minister of Finance*
P Shiv Shanker : *Minister of Human Resource Development*
Vasant Sathe : *Minister of Energy*
Bhajan Lal : *Minister of Agriculture*
B Shankaranand : *Minister of Law and Justice and Water Resources*
BS Engti : *Minister of State for Planning*
Prof MGK Menon : *Member*
Dr Raja J Chelliah : *Member*
Hiten Bhaya : *Member*
Abid Hussain : *Member*
Dr YK Alagh : *Member*
Prof PN Shrivastava : *Member*
JS Baijal : *Secretary*

FIRST PLAN

The First Plan (1951-56) had a two-fold objective: to correct the dis-equilibrium in the economy caused by the Second World War and partition of the country and to initiate simultaneously a process of all-round balanced development, which would ensure a rising national income and a steady improvement in the living standards over a period of time.

Since the country had to import foodgrains on a large scale in 1951 and there were inflationary pressures on the economy, the Plan accorded the highest priority to agriculture including irrigation and power projects. About 44.6 per cent of the total outlay of Rs 2,069 crore in the public sector (later raised to

Rs 2,378 crore) was allotted for its development. The Plan also aimed at increasing the rate of investment from five to about seven per cent of the national income.

SECOND PLAN

In 1954, Parliament declared that the broad objectives of economic policy should be to achieve a socialistic pattern of society under which the basic criteria for determining the lines of advance would be social gain and greater equality in income and wealth and not private profit. The Second Plan (1956-61), therefore, sought to promote a pattern of development which would ultimately lead to the establishment of a socialistic pattern of society in India. In particular, it stressed that the benefits of economic development should accrue more to the relatively less privileged sections of society and there should be a progressive reduction in the concentration of income, wealth and economic power.

The main aims of the Second Plan were: (i) an increase of 25 per cent in the national income; (ii) rapid industrialisation with particular emphasis on the development of basic and heavy industries; (iii) large expansion of employment opportunities, and (iv) reduction of inequalities in income and wealth and a more even distribution of economic power. The Plan also aimed at increasing the rate of investment from about seven per cent of the national income to 11 per cent by 1960-61. The Plan laid special stress on industrialisation—increased production of iron and steel, heavy chemicals including nitrogenous fertilisers and development of heavy engineering and machine-building industry.

THIRD PLAN

The Third Plan (1961-66) aimed at securing a marked advance towards self-sustaining growth. Its immediate objectives were to: (i) secure an increase in the national income of over five per cent per annum and at the same time ensure a pattern of investment which could sustain this rate of growth during subsequent Plan periods; (ii) achieve self-sufficiency in foodgrains and increase agricutural production to meet the requirements of industry and exports; (iii) expand basic industries like steel, chemicals, fuel and power and to establish machine-building capacity, so that the requirements of further industrialisation could be met within a period of ten years or so mainly from the country's own resources; (iv) utilise fully the manpower resources of the country and ensure a substantial expansion in employment opportunities, and (v) establish progressively greater equality of opportunity and bring about reduction in disparities of income and wealth and a more even distribution of economic power. The Plan aimed at increasing the national income by about 30 per cent from Rs 14,500 crore in 1960-61 to about Rs 19,000 crore by 1965-66 (at 1960-61 prices) and per capita income by about 17 per cent from Rs 330 to Rs 385 during the same period.

ANNUAL PLANS

The situation created by the Indo-Pakistan conflict in 1965, two successive years of severe drought, devaluation of the currency, general rise in prices and erosion of resources available for Plan purposes delayed finalisation of the Fourth Plan. Instead, between 1966 and 1969, three Annual Plans were formulated within the framework of the draft outline of the Fourth Plan. They took into account the conditions prevailing at that time. The state of the economy and the non-availability of financial resources for Plan purposes kept down the size of development outlay during this period.

FOURTH PLAN

The Fourth Plan (1969-74) aimed at accelerating the tempo of development in conditions of stabilty and at reducing fluctuations in agricultural production as well as the impact of uncertainties of foreign aid. It aimed at raising the standard of living of the people through programmes which at the same time were designed to promote equality and social justice. The Plan laid particular emphasis on improving the condition of the less privileged and weaker sections of the society, especially through the provision of employment and education. Efforts were also directed towards reduction of concentration and a wider diffusion of wealth, income and economic power.

The Plan aimed at increasing the net domestic product at 1968-69 factor cost from Rs 29,071 crore in 1969-70 to Rs 38,306 crore in 1973-74. In terms of 1960-61 prices, this implied an increase from Rs 17,351 crore in 1968-69 to Rs 22,862 crore in 1973-74. The average annual compound rate of growth envisaged was 5.7 per cent.

FIFTH PLAN

The Fifth Plan (1974-79) was formulated at a time when the economy was facing severe inflationary pressures. The major objectives of the Plan were to achieve self-reliance and to adopt measures for raising the consumption standards of the people living below the poverty line The Plan also gave high priority to bringing inflation under control and to achieve stability in the economic situation. The Plan targetted an annual growth rate of 5 5 per cent in national income. Four Annual Plans pertaining to the Fifth Plan period were completed. It was subsequently decided to end the Fifth Plan with the close of the Annual Plan 1978-79 and to initiate work for a new Plan for the next five years with new priorities and programmes

SIXTH PLAN

The Sixth Plan (1980-85) was formulated after taking into account the achievements and shortcomings of the past three decades of planning. Removal of poverty was the foremost objective of the Plan, even though it was recognised that the last of this magnitude could not be accomplished in a short period of five years.

The strategy adopted for the Sixth Plan consisted essentially in moving simultaneously towards strengthening the infrastructure for both agriculture and industry so as to create conditions for an accelerated growth in investments, output and exports and provide through special programmes designed for the purpose, increased opportunities for employment especially in the rural areas and the unorganised sector and meet the minimum basic needs of the people. Stress was laid on dealing with inter-related problems, through a system approach rather than in separate compartments; on greater management efficiency and intensive monitoring in all sectors and active involvement of the people in formulating specific schemes of development at the local level and securing their speedy and effective implementation.

The Sixth Plan actual expenditure stood at Rs 1,09,291.7 crore (current prices), as against the envisaged total public sector outlay of Rs 97,500 crore (1970-80 prices) accounting for a 12 per cent increase in nominal terms. The average annual growth rate for the Plan works out to 5.2 per cent, which is equal to the targetted growth rate for this period.

SEVENTH PLAN

The Seventh Plan (1985-90) emphasises policies and programmes which will accelerate the growth in foodgrains production, employment opportunities and raise productivity within the framework of the basic tenets of the planning, namely, growth, modernisation, self-reliance and social justice. With the stress on the generation of productive employment, the Plan aims at a significant reduction in the incidence of poverty and an improvement in the quality of life for the poor in villages and towns. Improvement in productivity and efficiency will help reduce the cost of capital intensive and resource intensive goods and services, most of which are widely used in all the sectors of the economy. This objective, while expanding the scale of the domestic market and improving the international competitiveness of the Indian economy, shifts the focus of planning for industry away from massive investments in new facilities to capacity and productivity, enhancing improvement in existing facilities.

The Plan envisages a total public sector outlay of Rs 1,80,000 crore which includes current development outlays of Rs 25,782 crore and gross investment of Rs 1,54,218 crore. The growth rate of gross domestic product at factor cost is expected to be five per cent over the Plan. This is in line with the growth rate achieved in the Sixth Plan and a little higher than the average for the past decade, the incremental capital output ratio which relates the increase in GDP at market prices to the total investment over the Plan period, is expected to be around five per cent in the Plan.

OUTLAY AND INVESTMENT

The public sector outlay as planned in the First, Second and Third Plans was

Rs 2,378 crore, Rs 4,800 and Rs 7,500 crore, while the actual expenditure was Rs 1,960 crore, Rs 4,672 crore and Rs 8,577 crore respectively. The investment by the private sector in the First, Second and Third Plans was Rs 1,800 crore, Rs 3,100 crore and Rs 4,100 crore respectively. The total public sector actual expenditure during the three Annual Plans was Rs 6,625 crore. The Fourth Plan outlay envisaged originally was Rs 24,822 crore, consisting of the public sector outlay of Rs 15,902 crore. The actual public sector expenditure during the Fourth Plan was estimated at Rs 15,779 crore. The Fifth Plan envisaged, public sector outlay of Rs 39,322 crore and the expected private investment was Rs 27,049 crore. The actual expenditure of the public sector during the Fifth Plan was Rs 39,426 crore. With re-ordering of investment of priorities, the Plan for 1979-80 envisaged a public sector outlay of Rs 12,601 crore against which the actual expenditure was Rs 12,176 crore. The Sixth Plan envisaged a total public sector outlay of Rs 97,500 crore against which the actual expenditure incurred was of the order of Rs 1,09,291.7 crore.

The progress of the Plan expenditure in the public sector for the Sixth Plan is shown in table 14.1

The Seventh Plan envisaged a public sector Plan outlay of Rs 1,80,000 crore. For the Annual Plan 1985-86, the outlay was fixed at Rs 32,238.56 crore against which the actual expenditure was Rs 33,059.90 crore. In addition, an amount of Rs 361.19 crore of Central assistance was provided towards relief against natural calamities.

The Plan provision for 1986-87 was of the order of Rs 39,051.53 crore and the actual expenditure amounted to Rs 39,149.11 crore. The Central assistance provided for relief against natural calamities during the year was Rs 556.05 crore.

Against the outlay of Rs 44,698.43 crore for 1987-88, the expenditure is expected to be (Revised Estimate) Rs 43,677.93 crore, in addition to the advance Plan assistance of Rs 1,113.55 crore for relief against natural calamities. The Annual Plan outlay for 1988-89 has been fixed at Rs 49,817.83 crore.

The details of the Plan outlays for various sectors have been given in table 14.2.

ACHIEVEMENTS

During the period 1950-51 to 1984-85, the net national product (NNP) at factor cost (national income) at 1970-71 prices increased from Rs 16,731 crore to Rs 57,243 crore implying a compound growth rate of nearly 3.7 per cent per annum. During the First Plan (1951-56), the national income increased by 19.3 per cent implying a compound growth rate of 3.6 per cent per annum as against the targetted growth rate of 2.1 per cent per annum. During the Second Plan (1956-61), as against the envisaged rate of growth of 4.5 per cent per annum, the actual rate of growth of national income achieved was four per cent per annum. During the Third Plan period (1961-66), there was a sharp decline in the rate of growth of national income at 2.2 per cent per annum as against the targetted rate of 5.6 per cent per annum; the decline being primarily due to steep fall in

TABLE 14.1 PROGRESS OF SIXTH PLAN OUTLAYS EXPENDITURE-CENTRE, STATES AND UNION TERRITORIES

(Rs crore)

Heads of Development	Sixth Plan Outlay 1980-85	Annual Plan 1980-81 (Actuals)	Annual Plan 1981-82 (Actuals)	Annual Plan 1982-83 (Actuals)	Annual Plan 1983-84 (Actuals)	Annual Plan 1984-85 (Actuals)	Total Sixth Plan (Actuals)
1. Agriculture	5,695.1	981.5	1,129.4	1,261.0	1,427.0	1,824.6	6,623.5
2. Rural Development	5,363.7	1,040.2	1,100.9	1,295.8	1,497.9	2,062.0	6,996.8
3. Special Area Programme	1,480.0	206.4	258.5	335.1	356.8	423.5	1,580.3
4. Irrigation and Flood Control	12,160.0	1,777.3	1,948.4	2,105.2	2,445.4	2,653.6	10,929.9
5. Energy	26,535.4	3,828.0	5,064.9	6,409.6	7,276.6	8,172.2	30,751.3
(a) Power	19,265.4	2,656.8	3,182.3	3,708.5	4,092.5	4,658.5	18,298.6
(b) New and Renewable Sources of Energy	100.0	4.3	13.9	22.5	33.7	88.7	163.1
(c) Petroleum	4,300.0	735.2	1,204.8	1,823.1	2,197.8	2,521.2	8,482.1
(d) Coal	2,870.0	431.7	663.9	855.5	952.6	903.8	3,807.5
(e) Energy Development	—	—	—	—	—	—	—
6. Industry and Minerals	15,017.6	2,194.5	2,777.9	3,075.3	3,916.4	4,983.4	19,647.5
(a) Village and Small Scale Industries	1,780.5	273.2	322.9	326.1	402.6	620.3	1,945.1
(b) Large and Medium Industries	13,237.1	1,921.3	2,360.0	2,709.2	3,478.8	4,321.1	14,790.4
(c) Others	—	—	95.0	40.0	35.0	42.0	212.0
7. Transport	12,412.0	2,163.0	2,583.1	2,752.8	3,075.8	3,633.7	14,208.4
(a) Railways	5,100.0	973.0	1,210.0	1,319.5	1,419.6	1,664.6	6,586.7
(b) Others	7,312.0	1,190.0	1,373.1	1,433.3	1,656.2	1,969.1	7,621.7
8. Communications and Information and Broadcasting	3,134.3	356.7	576.1	674.8	864.5	997.4	3,469.5
9. Science and Technology	865.2	97.4	148.3	208.1	228.5	338.1	1,020.4

TABLE 14.1 (Continued)

Heads of Development	Sixth Plan Outlay 1980-85	Annual Plan 1980-81 (Actuals)	Annual Plan 1981-82 (Actuals)	Annual Plan 1982-83 (Actuals)	Annual Plan 1983-84 (Actuals)	Annual Plan 1984-85 (Actuals)	Total Sixth Plan (Actuals)
10. Social Services	14,035.2	2,074.6	2,487.2	2,950.2	3,834.7	4,569.9	15,916.6
(a) Education	2,523.7	339.5	435.7	538.6	697.8	965.0	2,976.6
(b) Health and Family Planning	2,831.0	411.5	530.4	675.2	853.1	942.0	3,412.2
(c) Housing and Urban Development	2,488.4	477.3	488.1	507.3	656.9	709.5	2,839.1
(d) Other Social Services	6,192.1	846.3	1,033.0	1,229.1	1,626.9	1,953.4	6,688 7
11. Others	801.5	112.8	136.2	215.0	163.9	219.6	847.5
12. Total (1 to 11)	97,500.0	14,832.4	18,210.9	21,282.9	25.087.5	29,878.0	1,09,291.7
	—	(15,023.4)	(18,372.9)	(21,724.9)	(25,313.6)	(30,032.5)	(1,10,467.3)
(a) Central Plan	47,250.0	7,049.3	9,197.0	11,284.9	13,644.0	16,650.0	57,825 2
(b) State Plans	48,600.0	7,527.5	8,666.3	9,587.8	10,994.8	12,681 8	49,458 2
	—	(7,718.5)	(8,828.3)	(10,029.8)	(11,220.9)	(12,836 6)	(50,633.8)
(c) Union Territory Plans	1,650.0	255.6	347	410.2	448.7	546.2	2,008.3

Note : Figures in brackets are inclusive of expenditures (Rs 191 crore in 1980-81, Rs 162 crore in 1981-82, Rs 442 crore in 1982-83, Rs 226 crore in 1983-84 and Rs 154.5 crore in 1984-85) on works financed by Central assistance for relief from natural calamities.

1. Excludes Rs 2.85 crore on account of National Test House.

TABLE 14.2 SEVENTH PLAN OUTLAY BY HEADS OF DEVELOPMENT CENTRE, STATES AND UNION TERRITORIES

(Rs crore)

	Heads of Development	Seventh Plan Outlay 1985-90	Annual Plan 1985-86 Actuals	Annual Plan 1986-87 Actuals	Annual Plan 1987-88 RE	Annual Plan 1988-89 Outlay
	1	2	3	4	5	6
I.	Agriculture & Allied Activities	10,523.62	1,825.92	2,215.79	2,632.31	2,712.12
II.	Rural Development	8,906.08	2,226.14	2,667.65	2,886.75	2,848.81
III.	Special Area Programmes	2,803.59	447.33	627 60	661.55	771.80
IV.	Irrigation & Flood Control	16,978.65	2,792.24	3,221.63	3,345.88	3,858.66
V.	Energy	55,128.96	9,678.97	11,458.40	12,252.53	14,847.32
	1. Power	34,273.46	5,615.53	6,701.45	7,437.7	9,584.08
	2 Petroleum	12,935.37	2,935.64	3,382.03	3,414.99	3,394.56
	3. Coal & Lignite	7,400.58	995.04	1,233.05	1,280.97	1,733.00
	4. Non-Conventional Sources of Energy	519.55	132.76	141.87	118.87	135.68
VI.	Industry & Minerals	22,107.85	5,437.12	5,564.05	5,794.06	5,789.36
	1. Village & Small Industries	2,752.74	524.35	615.74	619.71	684.73
	2. Other Industries	19,355.11	4,912.77	4,948.31	5,174.35	5,104.63
VII.	Transport	22,644.86	4,072.19	5,201.43	6,011.57	7,101.15
	1. Railways	12,334.55	1,941.68	2,697.06	3,300.00	3,850.00
	2. Others	10,310.31	2,130.51	2,504.37	2,711.57	3,251.15
VIII.	Communications	4,474.52	942.12	1,085.61	1,503.92	1,821.82
IX.	Science, Technology & Environment	2,463.06	404.78	512.38	616.25	795.60
X.	General Economic Services	1,395.6	179.05	423.12	370.22	558.79
XI.	Social Services	31,545.24	4,858.45	5,901.99	7,256.87	8,297.61
	1. Education	6,382.65	876.79	1,014.38	1,628.37	1,923.50
	2. Medical & Public Health	3,392.89	579.89	641.77	773.03	868.11
	3. Family Welfare	3,256.26	479.81	561.11	572.89	600.00
	4. Housing	2,428.21	437.94	561.04	558.39	592.16
	5. Urban Development	1,801.29	323.17	359.01	395.09	476.75
	6. Other Social Services	14,283.94	2,160.85	2,764.68	3,329.10	3,837.09
XII.	General Services	1,027.97	195.59	269.46	346.02	414.80
	TOTAL (I to XII)	1,80,000.00	33,059.90	39,149.11	43,677.93	49,817.84
			(33,421.09)	(39,705.16)	(44,791.48)	
	(a) Central Plan	95,534.00	19,115.47	22,401.76	25,700.69	28,714.65
	(b) State Plans	80,698.00	13,249.52	16,042.98	17,260.75	20,333.19
			(13,610.71)	(16,599.03)	(18,374.30)	
	(c) UT Plans	3,768.00	694.91	704.37	716.49	770.00

Note : As per revised budget classification.

. Figures in brackets are inclusive of expenditure on works financed by Central assistance for relief against natural calamities (Rs 361.19 crore in 1985-86, Rs 556.05 crore in 1986-87 and Rs 1,113.55 crore in 1987-88).

: Annual Plan Outlays/Expenditure in respect of some erstwhile union territories have been included in state plans' figures consequent on their attainment of statehood. The Seventh Plan outlays are, however, as per the then existing situation.

RE: Revised Estimates

agricultural production and as a consequence decline in NNP of the order of 5.9 per cent in the last year of the Third Plan. However, during the subsequent three Annual Plans, the economy picked up and the rate of growth of national income during 1966-69 was observed to be four per cent per annum, whereas during the Fourth Plan (1969-74) the rate of growth of national income slightly declined to 3.4 per cent per annum. During the Fifth Plan (1974-79), the rate of growth of 3.2 per cent per annum was an achievement. In 1979-80, the national income declined sharply by 5.2 per cent over the previous year. However, an average growth rate of 5.3 per cent per annum during the Sixth Plan period was recorded.

Based on the new series of the National Income Statistics at 1980-81 prices, the growth rate for the first three years of the Seventh Plan is estimated at five per cent in 1985-86, 3.6 per cent in 1986-87 and 3.4 per cent in 1987-88 which was a drought year and witnessed a fall in agricultural production.

The index of agricultural production with the triennium ending 1969-70 as base, rose from 71.9 at the end of the First Plan to 86.7 at the end of the Second Plan. During the Third Plan, performance of agriculture was not quite satisfactory. Widespread drought during 1965-67 slowed down the rate of growth in agricultural production and led to increased import of foodgrains and other items. The index of agricultural production reached the level of 80.8 in 1965-66 and 80.7 in 1966-67. These drought years also witnessed the introduction of the best available agricultural technology for the first time in India in the form of high-yielding variety programme and multiple cropping programme. The following years recorded substantial improvement in agricultural production. As a result the index, after recovering to 98.9 points in 1967-68 increased steadily to 112.4 in 1973-74. The next year 1974-75 was again a bad year for agriculture when the index declined to 108.6. This was followed by considerable improvement in 1975-76 when the index touched 125.1. In 1976-77, the index registered a decline of 8.8 points and stood at 116.3, but again shot up to 132.9 in 1977-78 and 138 in 1978-79. The year 1979-80 witnessed a fall by 21 points when the index number of agricultural production slipped to 117. The index recovered to 135.3 in 1980-81 and further increased to 142.9 in 1981-82.

During 1982-83, the *kharif* production was adversely affected due to the wayward monsoon which was inadequate, uneven and untimely. Even so, the fall in foodgrains production was only marginal, indicated by a drop of 5.4 points in the production index. Agricultural production registered significant improvement in 1983-84 which was a near normal year from the point of view of weather conditions. Index of agricultural production increased from 137.5 in 1982-83 to 156.4 in 1983-84 and production of foodgrains touched a record level of 15.237 crore tonnes. Weather conditions during 1984-85 were not very satisfactory. As a result, the production of foodgrains declined to 14.554 crore tonnes and the index number of agricultural production also declined marginally to 154.6. During the kharif 1985, the onset of the south-west monsoon was delayed over the central and northern states and its behaviour during the season was erratic over many states.

However, the weather conditions during the *rabi* season were on the whole rather favourable to crop production. Consequently, foodgrains output during 1985-86 stood at 15.044 crore tonnes. The weather conditions during 1986-87 continued to be unsatisfactory. The onset of the monsoon was delayed over the eastern states, while the southern states experienced dry spells leading to moisture stress conditions. As a result, only 14.342 crore tonnes of foodgrains production could be achieved during 1986-87. The year 1987-88 witnessed severe drought conditions in most parts of the country and the incidence of heavy floods in the eastern states. The foodgrains production consequently further fell down to 13.841 crore tonnes. During 1988-89, the production of foodgrains is expected to be of the order of about 17.00 crore tonnes

In the field of irrigation, the potential created from major, medium and minor schemes increased from 2.26 crore hectares in 1950-51 to 2.626 crore hectares at the end of First Plan, 2.909 crore hectares at the end of Second Plan, 3.361 crore hectares at the end of Third Plan and 3.71 crore hectares at the end of 1968-69. At the end of 1973-74, the potential created was 4.42 crore hectares. By 1978-79 the corresponding figure was 5.446 crore hectares and by 1984-85 the figure was 6.753 crore hectares. The potential created by 1986-87 was 7.167 crore hectares.

The total installed generating capacity (including non-utility), which was only 2,300 mw in 1950, increased to 47,705 mw by the end of March 1985. Out of the Seventh Plan target for addition to the installed capacity of 22,245 mw, 6,847 mw had been added during 1985-87, taking the total installed capacity on public-utilities to 49,432 mw by the end of March 1987.

Under the rural electrification programme, a total of 4.5 lakh villages had been electrified out of a total 5.76 lakh villages by the end of December 1988. During 1987-88, 21,535 villages were electrified.

Large investments in the industrial and mineral sectors particularly from the beginning of the Second Plan have brought about a significant transformation in the industrial scene. The rate of industrial growth had not been uniform during this period. After a steady growth of about eight per cent during the initial period of 14 years, there was a fluctuating trend in the industrial growth rate approaching near stagnancy in 1966-68, going up to a level of 9.6 per cent in 1976-77 and dipping to 1.4 per cent in 1979-80. During the decade 1970-71 to 1979-80, the average growth rate had been about four per cent per annum. The average growth rate of industry in the Sixth Plan period amounts to nearly six per cent which is a small improvement over the average of about 5.3 per cent in the proceeding five years.

The Seventh Plan envisages an average annual growth rate of 8.7 per cent in the output of the industry sector. For 1985-86, the first year of the Seventh Plan, the actual growth rate achieved was 8.7 per cent as per revised index of industrial production (Base 1980-81 = 100). In 1986-87, the second year of the Plan, the growth rate achieved was 9.1 per cent. In 1987-88, the growth rate was dampened to a large extent by the decline in production towards the end of the year, due to unprecedented drought. The growth rate recorded was only 7.5 per cent in

1987-88. Thus, over the first three years of the Seventh Plan an average compound rate of 8.5 per cent per annum was achieved. The decline in the industrial growth in 1987-88 has now reversed and during the first eight months (April-November) of 1988-89, a growth rate of 9.3 per cent has been achieved as compared to the corresponding period of the previous year.

The Government initiated a number of measures late in the Sixth Plan and in the early years of the Seventh Plan, with the objective of removing the constraints on industrial growth and providing a more liberal and congenial environment for the development of industries. A number of steps were taken to liberalise industrial procedures relating to creation of capacity, import of technology, etc., with the objective of infusing a degree of competition in Indian industry so as to ensure reasonable prices and improvement in quality. These include re-endorsement of capacities, delicensing of industries including specified MRTP and FERA industries and broad-banding of a large number of industries, especially in the areas of high technology, industries linked with energy production and utilisation, as well as in mass consumer goods industries. The provisions of the MRTP Act and FERA regulations were rationalised to facilitate entry into industrial areas of high priority. The expansion of existing units has been liberalised and investment in modernisation/renovation/ replacement, as well as for export production, has been exempted from industrial licensing. The licensing of new capacity has been liberalised and the concept of minimum economic scale introduced to promote production efficiency, taking advantage of the economies of scale.

A number of policy measures have been initiated for the development of specific industries like textiles, sugar, steel, electronics, etc. Steps have also been taken to tackle the problem of industrial sickness. These include: (i) the system for early detection of industrial sickness introduced by the Reserve Bank of India; (ii) various steps for checking industrial sickness and promoting industrial revival evolved by the Industrial Reconstruction Bank of India; (iii) setting up of the Board for Industrial and Financial Reconstruction, and (iv) setting up of the Small Industries Development Fund in the IDBI to provide refinancing assistance not only for development, expansion and modernisation but also for rehabilitation of sick industrial units in the small scale sector.

The Government has also set up modernisation funds for textile and jute industries to cater to the problems of those industries which account for a major share of industrial sickness.

The Government recently took a decision to establish 100 growth centres all over the country in the next five years to act as nuclei for industrial growth and promote accelerated development, especially in backward areas. In the first phase, 61 growth centres are being set up.

The educational system has recorded a phenomenal growth during the last three decades. The number of institutions were 2,31,278 in 1950-51, and by 1986-87, it rose to 7,59,615.

The enrolment of students in 1986-87 (classes I—VIII) was 1,187.73 lakh, comprising 723.93 lakh boys and 463.80 lakh girls. This works out to 80.20 per cent (95.21 per cent boys and 63.96 per cent girls) of the projected population in the age group of 6-14. Along with this rapid expansion of schooling facilities the literacy rate amongst the population went up from 16.67 per cent in 1951 to 36.17 per cent in 1981. Nonetheless, there were over 43.7 crore illiterates in 1981. According to the Seventh Plan, it is envisaged to achieve universal elementary education and eradication of adult illiteracy in the age group of 15-35 by 1990. However, these targets are proposed to be achieved by 1995 under the National Policy on Education.

PROGRAMME IMPLEMENTATION

The Ministry of Programme Implementation closely monitors the implementation of anti-poverty programmes, the performance of various industrial infrastructure sectors of the economy and the implementation of all mega major and medium Central sector projects in the country.

The monitoring of the poverty alleviation programmes involves *vis-a-vis* the monitoring of the 20-Point Programme, *i.e.*, programmes for raising incomes, creating assets and improving the quality of life of the poor, welfare of scheduled castes/scheduled tribes, some of the minimum needs programmes like rural water supply, house sites and construction assistance, rural electrification, rural health, nutrition, elementary education, adult literacy and slum improvement, as well as other programmes aimed at increasing production and productivity in the economy, efficient distribution of consumer goods, adoption of two-child norm, development of youth and women, conservation of environment and making administration responsive to the public needs. Table 14.3 indicates the targets and physical achievements of these programmes during 1987-88 and 1988-89.

Infrastructure monitoring by the Ministry of Programme Implementation includes monitoring of the performance of key sectors *viz.*, Power, Coal, Steel, Railways, Cement, Shipping and Ports, Telecommunications, Fertilisers and Petroleum. The overall infrastructure performance for 1987-88 and 1988-89 is given in table 14.4.

The project monitoring covers the implementation of Central sector projects costing over Rs 20 crore each falling under the purview of the Ministries/ Departments of Atomic Energy, Civil Aviation, Chemicals and Petro-chemicals Coal, Telecommunications, Fertilisers, Mines, Steel, Petroleum and Natural Gas, Power, Public Enterprises, Railways and Surface Transport. The projects are classified into mega projects, each costing above Rs 1,000 crore; major projects, each costing above Rs 100 crore but below Rs 1,000 crore and other projects costing Rs 20 crore and above, but below Rs 100 crore. The number and anticipated investment in such projects as on 1 October 1988 is given in table 14.5.

TABLE 14.3 20-POINT PROGRAMME—TARGETS AND ACHIEVEMENTS

Item	Unit	1987-88 Target	1987-88 Achievement	1988-89 Target	1988-89 Achievement
1. Irrigation Potential	000' Ha	2,380.8	2,301.5	3,831.9	NA
2. Dryland Farming	No. of watersheds				
3. Pulses Production	Crore Tonnes	1.63	1.10[1]	1.33	NA
4. Oilseeds Production	Crore Tonnes	1.77	1.24[1]	1.59	1.55
5. IRDP	Lakh Families	39.64	42.47	31.93	23.47
6. NREP	Crore Mandays	363.56	370.77	343.09	225.92
7. RLEGP	-do-	268.41	315.9	260.79	164.11
8. Surplus Land Distribution	Lakh Acres	2.71	0.82	2.26	0.64
9. Bonded Labour Rehabilitation	'000 Nos.	16.90	19.35	19.68	6.97
10. SC Families Assisted	Lakh Nos	20.43	25.16	21.06	14.68
11. ST Families Assisted	Lakh Nos.	8.06	12.6	8.33	6.74
12. Drinking Water Supply	No. of Villages ('000)	49.54	51.29	56.48	28.26
13. Rural House Site Allotment	Lakh Nos	5.5	9.19	6.00	5.97
14. Construction Assistance Provided (Rural)	Lakh Nos.	3.65	4.13	3.83	2.93
15. Improvement of Slums	No. of Persons	15.45	17.56	14.87	13.22
16. EWS Houses (Urban)	-do-	1.08	1.21	1.40	0.86
17. Village Electrification	'000 Nos	21.38	21.38	17.06	8.80
18. Pump sets Energisation	Lakh Nos.	3.98	5.69	4.54	3.32
19. Tree Plantation	Crore Nos.	359.39	355.11	400.26	374.22
20. Biogas Plants	'000 Nos.	110.9	161.5	130	67.87
21. Sterilisation	Lakh Nos.	60.0	48.8	53.74	25.52
22. Primary Health Centres	Nos.	2,274	2,168	3,151	560
23. Sub-Centres	Nos.	9,233	8,095	13,288	1,651
24. ICDS Blocks	Nos.	1,342	1,508	1,696	1,684
25. Elementary Education	Lakh Nos.	53.3	49	55.21	NA
26. Adult Literacy	—do—	89.2	91.71	99.13	NA
27. Fair Price shops opened	Nos.	4,035	9,926	4,387	4,482
28. Small Scale Industries Units registered	Lakh Nos.	1.45	1.71	1.51	1.11

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1. Provisional

TABLE 14.4 INFRASTRUCTURE PERFORMANCE

Sl. No	Sector	Unit	April-December	
			1987-88	1988-89
1.	Power Generation	Crore Units	14,915	16,189
2	Coal Production	Lakh Tonnes	1,241.8	1,328.7
3	Production at integrated Steel Plants			
	(i) Hot metal	- do-	79.2	86.7
	(ii) Ingot Steel	do-	69.9	78.3
	(iii) Saleable Steel	do	60.3	66.4
4	Railway revenue earning goods traffic	do	2,101.3	2,180.7
5.	Cargo handled at major ports	do -	957.6	1,074.4
6.	Telecommunications[1]			
	(i) Telecom instruments production	'000 nos	501.08	635.94
	(ii) Provision of new (net) telephone connections (monitored sector)	do	83.88	78.38
	(iii) Commissioning of net switching capacity (monitored sector)	'000 lines	74.60	65.43
7	Cement Production	Lakh Tonnes	288.2	322.8
8.	Fertiliser Production			
	(i) Nitrogen	- do -	38.9	49.1
	(ii) Phosphate	- do-	11.3	18.5
9.	Petroleum			
	(i) Crude Oil Production	do-	226.2	238.5
	(ii) Refinery throughput	- do -	353.1	354.6

1. Provisional

TABLE 14.5 NUMBER OF MEGA, MAJOR AND MEDIUM PROJECTS WITH ANTICIPATED INVESTMENT

	Number	Anticipated Investment (Rs crore)	Per cent of total anticipated investment
Mega projects costing Rs 1,000 and above	17	33,206	43
Major projects costing between Rs 100 crore and Rs 1,000 crore	99	34,172	44
Medium projects costing between Rs 20 crore and Rs 100 crore	187	9,588	13
Total	303	76,966	100

15 Agriculture

ECONOMIC regeneration attempted in the successive Five Year Plans have has made agriculture a pride of national economy. This sector, today, provides livelihood to about 70 per cent of labour force, contributes nearly 35 per cent of the net national product and accounts for a sizeable share of total value of country's exports. It supplies the bulk of wage goods required by the non-agricultural sector and raw material for a large section of industry.

The per capita net availability of foodgrains went up to a level of 478 grams per day in 1986 as compared to that of 395 grams in early fifties. In 1987, it was provisionally estimated at 465.5 grams per day. In terms of gross fertiliser consumption, India ranks fourth in the world after USA, USSR and China. The country has the largest area in the world under pulse crops. In the field of cotton, India is the first one to evolve a cotton hybrid. The country has made a major breakthrough in prawn seed production and pest culture technology.

The compound growth rate in agricultural production during the period 1949-50 to 1986-87 is 2.62 per cent per annum. The production of foodgrains increased significantly from 549.2 lakh tonnes in 1949-50 to 1,523.7 lakh tonnes in 1983-84. The cropping pattern is more diversified and cultivation of commercial crops has received new impetus in line with domestic demands and export requirements.

During the post-green revolution period *i.e.*, 1967-68 to 1986-87, the growth rate in agricultural production was assessed at around 2.64 per cent per annum. Production of foodgrains during this period increased from 9.51 crore tonnes to 14.34 crore tonnes. Cropping pattern has undergone perceptible changes and non-traditional crops like summer *moong*, soyabean, summer groundnut, sunflower, etc., are gradually gaining importance. In order to utilise scarce resources optimally, a short duration third crop is also being raised in some areas, utilising the residual moisture available from post-*kharif*/post-*rabi* cultivation.

Agricultural production is expected to go up by 17 to 20 per cent during 1988-89 and exceed the production targets fixed for the year in several crops. Foodgrains production this year is expected to cross the target of 1,665.7 lakh tonnes and may even go up to 1,700 lakh tonnes or more. The production of oilseeds and cotton is also likely to show significant increases over the low levels of last year.

Availability of edible oils including *Vanaspati* has also increased significantly and its production in 1987 was 9,47, 153 metric tonnes. The country has been able to sustain and improve the availability of basic consumption articles and has thus raised the standard of living of the people. Some key indicators of agricultural progress are shown in table 15.1

AGRICULTURAL ADMINISTRATION

Department of Agriculture and Cooperation is ensuring formulation and implementation of national policies and programmes, aimed at achieving rapid

TABLE 15.1 SOME KEY INDICATORS OF AGRICULTURAL PROGRESS

Item/Unit	1950-51	1960-61	1970-71	1980-81	1985-86	1986-87	1987-88	1988-89	
								Target	Likely Production
I. FOODGRAIN PRODUCTION (lakh tonnes)									
(i) Rice	206	346	422	536	638	606	564	679.5	680.0 - 695.0
(ii) Wheat	65	110	238	363	471	443	451	523.2	510.0 - 520.0
(iii) Other Cereals	153	237	306	291	262	268	259	330.0	340.0 - 350.0
(iv) Total Cereals	424	693	966	190	1,371	1,317	1,274	1,532.7	1,530.0 - 1,565.0
(v) Total Pulses	84	127	118	106	133	117	110	133.0	135.0 - 145.0
(vi) Total Foodgrains	508	820	1,084	1,296	1,504	1,434	1,384	1,665.7	1,665.0 - 1,710.0
II. INPUTS									
(a) Seed									
(i) Production and Breeder Seeds (Thousand quintals)	—	—	—	5.27	23.64	28.60	22.55	—	32.87
(ii) Production of Certified Seed (Lakh quintals)	—	—	—	21.86	44.84	56.51	53.42	—	65.06
(iii) Distribution of Certified/ Quality seed (lakh quintals)	—	—	—	25.01	55.01	55.83 (P)	56.30 (P)	64	
(b) Fertiliser Consumption (NPK)									
(i) Total (lakh tonnes)	0.69	2.92	21.77	55.16	84.74	87.38 (P)	90.12 (P)	102.00	113.31
(ii) Per hectare	Neg.	1.9	13.13	31.83	48.16 (P)	49.66 (P)	NA	NA	NA
(c) Area Under High Yielding Varieties (lakh hectares)	—	18.9[1]	153.8	430.7	554.2	561.2 (R)	512.3	650.0	—
(d) Cooperative Credit disbursed (Rs crore)	24.23	214.35	678.79	2,126.31	3,673.20 (P)	3,907.25 (P)	4,280.00 (P)	5,441.27	—

1. Relates to 1966-67 NA: Not Available (P) Provisional (R) Revised Neg: Negligible

agricultural growth through optimum utilisation of the country's land, water, soil, plant, animal, dairy and fishery resources. This is ensured by timely and adequate supply of inputs and services. The Department functions as the agency for maintenance of wide range of statistical information for formulation of programmes and policies. It also ensures payment of remunerative returns to the farmers by announcing procurement/minimum support prices for important agricultural commodities from time to time, for motivating farmers to put in their best.

HARVESTING SEASON

There are three main crop seasons, namely, *kharif, rabi* and summer. The major *kharif* crops are rice, *jowar, bajra*, maize, cotton, sugarcane, sesame and groundnut. The major *rabi* crops are wheat, *jowar*, barley, gram, linseed, rapeseed and mustard. Rice, maize and groundnut are grown in summer season also.

LAND UTILISATION

Land utilisation statistics are available for 92.7 per cent of total geographical area of 32.87 crore hectares. According to statistics available from the states, the area under forests has increased from 4.05 crore hectares in 1950-51 to 6.73 crore hectares in 1983-84. Net sown area has increased from 11.9 crore hectares to 14.1 crore hectares during the same period. The broad cropping pattern indicates that though foodgrains have a preponderance in gross cropped area as compared to non-foodgrains, its relative share has come down from 76.7 per cent during 1950-51 to 72.0 per cent during 1984-85.

INPUTS

SEEDS

Seed is the basic agricultural input and its importance has been known both to the farmers and the Government. Over a span of four decades since independence, India has transformed itself from a subsistence food importing country to one which is self-sufficient in foodgrains. Impressive gains have been attained in food production which increased from 510 lakh tonnes in 1950-51 to 1,710 lakh tonnes in 1988-89 (anticipated). Recognising seed as the primary input for increasing the agricultural production, the Central government established the National Seeds Corporation in 1963 and the State Farms Corporation of India in 1969 to encourage the production and distribution of certified seeds of various crops. Thirteen state seed corporations have also been established to supply improved seeds to the farmers. It is their primary function to arrange the production and distribution of certified seeds.

QUALITY CONTROL

The Seeds Act was passed by Parliament in 1966 to ensure that farmers get good quality seeds. The main quality control provisions are applied through the certification system followed in the country. There is a Central Seed Testing Laboratory and 76 State Seed Testing Laboratories functioning in various states/union territories. There are 19 Seed Certification Agencies. In 1972, Seeds Act, 1966 was amended to constitute a Central Seeds Certification Board. New varieties of seed are notified by the Central Seed Committee. About 1,600 new varieties have been notified during the last 19 years. This has been possible due to collective efforts of research scientists, seed technologists and progressive farmers. Seed has been declared an essential commodity and the Seed Control Order was issued in December 1983.

BREEDER SEED

The production of breeder seed is organised by the Indian Council of Agricultural Research (ICAR) through the concerned breeders and scientists on receipt of indents from state governments. National Seeds Corporation and State Farms Corporation of India also produce breeder seeds. The availability of breeder seed in the country has increased from 3,914.67 quintals in 1981-82 to 22,550 quintals in 1987-88 recording more than a seven-fold increase. Breeder seed production of cereals, pulses, oilseeds, fodder and fibre crops during 1988-89 is likely to be of the order of 32,870 quintals.

There has, however, been a shortage of breeder seeds of oilseeds, particularly, groundnut, due to non-availability of nucleus material. All possible efforts are being made to ensure adequate availability of breeder seeds, particularly of oilseeds and pulses. A system has also been introduced to monitor quality of breeder seeds.

FOUNDATION SEED

Foundation seed is the secondary stage of seed production cycle. The National Seeds Corporation, the State Farms Corporation of India and the state seeds corporations have been assigned the responsibility for production of foundation seed. To ensure adequate availability of foundation seed, the Government is now allocating breeder seeds to private seed producers also for rapid multiplication of the breeder seeds to foundation seeds. The state seeds corporations produce foundation seed to meet local requirements, while NSC and SFCI take care of the requirement of national varieties. The foundation seed production of cereals, pulses, oilseeds, fodder and fibre crops during 1988-89 is likely to be of the order of 6,88,921 quintals, as against the production of 4,07,517 quintals during 1987-88. The less production of foundation seed is mainly due to the drought condition that prevailed during 1987-88.

CERTIFIED SEED

Stupendous growth in the production and availability of seeds is the main indicator of the achievement in the seeds sector. The distribution of certified/quality seeds showed a phenomenal increase from 14 lakh quintals in 1979-80 to 56.30 lakh quintals during 1987-88. The target for 1988-89 has been fixed at 64 lakh quintals. Crop-wise details are given in table 15.2

TABLE 15.2 DISTRIBUTION OF CERTIFIED/QUALITY SEEDS

(Quintals)

Crop	1984-85	1985-86	1986-87 (Tentative)	1987-88 (Tentative)	1988-89 (Target)
Cereals	26,11,000	31,37,000	35,27,000	35,44,000	34,39,000
Pulses	2,09,000	2,32,000	3,39,000	3,46,000	5,75,000
Oilseeds	6,53,000	5,68,000	6,29,000	6,54,000	8,60,000
Fibres	1,41,000	2,35,000	1,72,000	1,54,000	2,91,000
Potato	12,25,000	13,22,000	9,06,000	9,16,000	12,16,000
Others	7,000	7,000	10,000	16,000	14,000
Total	48,46,000	55,01,000	55,83,000	56,30,000	64,00,000

BUFFER STOCK OF SEEDS

In the event of unforeseen contingencies like floods, droughts, diseases, etc., seed has to be made available to the farmer in the affected areas at short notice. This necessitates maintenance of adequate quantities of buffer stocks. A scheme was accordingly launched in 1978 to meet such requirement which is continuing during the Seventh Plan, for keeping certain quantities of different seeds in reserve. The NSC has been implementing this scheme on behalf of the Government in the past except in 1984-85, when state seeds corporations were allowed to participate on trial basis. From the financial year 1987-88, the buffer stock scheme has been modifed to enable the participation of state governments through their respective state seeds corportions, if they so desire on the basis of 50 per cent sharing of the cost with the Centre. Under the revised scheme, state seeds corporations would be allowed to maintain the buffer stock of seeds of oilseeds, pulses and coarse grains. The NSC would maintain buffer stocks for meeting the requirements of north-eastern states for paddy, maize, oilseeds and pulses.

TRANSPORT SUBSIDY

About 70 to 80 per cent of the seeds supplied to north-eastern states are meant for sowing in the rabi season. As there are no air-conditioned storages/godowns in the region, the seeds if sent early, deteriorate due to heavy rains and humid climate. The seeds, therefore, can be transported only after the monsoon is over. This leaves very little time to supply and distribute seeds in north-eastern states for sowing in rabi. For this, the Government from 1986-1987, has initiated a Central sector scheme of transport subsidy on seeds to north-eastern states. This scheme purports to subsidise the difference in cost of transportation of seeds by rail and road to these states. In case of Assam, 50 per cent of cost difference will be subsidised for the quantities of seeds moved. For other six states in this region the differential cost will be fully subsidised for the quantities of seeds moved.

NATIONAL SEEDS PROJECT

In continuation of the Phase-I and Phase II of the National Seeds Project (NSP), now Phase III is under an advanced stage of finalisation. This project is being assisted by the World Bank.

NATIONAL SEEDS CORPORATION

Although the seed production programme has been under the grip of severe drought during 1987-88, the National Seeds Corporation has produced about 3.23 lakh quintals certified seed, 0.35 lakh quintals foundation seed and 0.019 lakh qtls breeder seed. During the year 1988-89, the target of breeder, foundation and certifed seed fixed by NSC is 5,235; 49,738 and 7,00,000 quintals respectively.

STATE FARMS CORPORATION OF INDIA

State Farms Corporation of India is managing 13 large mechanised farms in different agro-climatic conditions of the country for production of breeder, foundation and certified seeds of cereals, pulses, oilseeds, fibre, vegetable and plantation and horticultural crops in a total area of 36,715 hectares. The Corporation has also established 10 elite progeny orchards at different farms where nurseries of different horticulture products are propagated for distribution among farmers. It is also running a developmental farm in Mizoram where local farmers are trained in the techniques of modern farming and handling of agricultural machinery. Various types of training in various modern techniques, are conducted in agriculture and horticulture.

EXPORTS

Export of breeder and foundation seeds as also of certified seeds of pulses and oilseeds is banned. Request for supply of certified seeds of cereals is examined on merit and subject to domestic requirements, before exports are allowed.

NEW POLICY ON SEED DEVELOPMENT

In order to boost agricultural productivity, a new policy on seed development has been formulated which is effective from October 1988. The New Seed Policy has been evolved with special emphasis on: a) the import of high quality seeds; b) a time-bound programme to strengthen/modernise plant quarantine facilities; c) effective observance of procedure for quarantine/post-entry quarantine and

d) incentives to encourage the domestic seed industry to make the country self-reliant in seed sector.

FERTILISERS

Fertiliser is the kingpin for increasing productivity in agriculture. For every tonne of fertiliser nutrient put in the soil, there is an increase of eight to ten tonnes of foodgrains, other things remaining equal. It has been estimated that about 70 per cent of the growth in agricultural production can be attributed to increased fertiliser use. The increase in consumption of fertilisers over a year would thus be a good indicator of the country's performance in the field of agriculture. The per unit area consumption of fertilisers in India which was among the bottom half of the countries in the world in this regard, has considerably picked up. From almost zero level per hectare consumption in 1950-51, the consumption in 1985-86 is estimated to have gone up to 50.41 kg per hectare. The total consumption has gone up from 69 thousand tonnes of nutrients in 1950-51 to an estimated level of 90.12 lakh tonnes in 1987-88. The estimated consumption of fertilisers during 1988-89 is about 113 lakh tonnes.

BIO-FERTILISER

The decreasing reserves of non-renewable petroleum feed-stock all over the world and increasing cost of chemical fertilisers, necessitate the search for an alternative renewable source to supplement the ever increasing demand of chemical fertilisers and emphasis on integrated nutrient supply through conjuncture use of fertilisers, organic manures and bio-fertilisers. Scientists have proved that the bio-fertilisers are effective, cheap and renewable source to supplement the chemical fertilisers. The Rhizobium inoculant has been found to be effective for pulses and legume oilseeds like soyabean, groundnut and the blue-green-algae (BGA) for low-land paddy in our country. Considering the prospects of bio-fertilisers in the country, the Government has sanctioned a national project on the development and use of bio-fertilisers during 1982-83 with an outlay of Rs 2.82 crore. Under the project, one national centre is being established at Ghaziabad, while six regional bio-fertiliser development centres are being established at Bhubaneshwar, Shillong, Jabalpur, Bangalore, Pune and Hisar. During the year 1988-89, these centres produced about 200 tonnes of BGA culture. Under the national project on bio-fertilisers technology, training and field demonstration programmes are also being organised by the regional centres at Hisar and Jabalpur for farmers. The project will be strengthened through establishment of two additional regional centres and setting up of 20 Rhizobium production units by state institutional agencies.

ORGANIC MANURES

Organic manures are essential for maintaining proper soil health besides contributing plant nutrients. The country has a potential of 650 lakh tonnes of rural and 160 lakh tonnes of urban organic wastes. The present utilisation is only to the extent of 235 lakh and 67 lakh tonnes respectively.

SOIL TESTING

Soil testing is an important tool to advise farmers on the judicious, balanced and efficient use of fertilisers for the most economic returns to them. There are 447 soil testing laboratories (including 345 static and 102 mobile laboratories) with annual analysing capacity of about 64 lakh soil samples. The soil testing facilities have been provided in all important districts in most of the states except 120 districts, which are being served through mobile soil testing laboratories. For delineation of the micro-nutrient deficiency in the soils, 25 sets of Atomic Absorption Spectro-Photometer have been provided to state governments under Indo-UK bilateral programme. Besides, a number of such equipment have been set up by the state governments/agricultural universities also. Under the national project on development of fertiliser use in low-consumption rainfed areas, it is proposed to establish 10 district soil testing laboratories in Rajasthan and five each in Maharashtra and Madhya Pradesh besides setting up of a Regional Soil Testing laboratory in north-eastern region.

FERTILISER QUALITY CONTROL

The Government has revised the Fertiliser Control Order of 1957 in 1985 to regulate the prices, trade and quality of fertilisers in the country so that farmers get right quality of fertilisers at the right time and at reasonable prices. It includes the specification of different fertilisers being sold in the country, methods of sampling, analysis and provision for appointment of enforcement agencies, quality control laboratories, and provision for regulating trade and distribution of fertilisers. There are 43 fertiliser quality control laboratories in the country and one Central Laboratory and Training Institute at Faridabad with a total annual analysing capacity of about 80,000 samples. The Central Laboratory at Faridabad is engaged in organising training programmes for state enforcement officers and analysts and also for fertiliser dealers, besides analysis of samples from imported and indigenous stock. Three regional laboratories have also been established as branches of the Central Institute located at Bombay, Madras and Kalyani (near Calcutta).

PROMOTION OF FERTILISER CONSUMPTION

To promote fertiliser use in rainfed areas, a 'National Project on Development of Fertiliser Use in Low Consumption Rainfed Areas' has been sanctioned in 60 identified districts. The districts were selected on the basis of rainfall, gross irrigated area and existing level of fertiliser consumption. The main components of the scheme are: i) opening of 200 additional retail outlets in each of the selected districts by providing subsidy at the rate of Rs 1,200 for each retail outlet; ii) organisation of 10 fertiliser block demonstrations in each district; iii) organisation of 10 farmers' training centres in each district; iv) establishment of 10 soil testing laboratories in Rajasthan and five each in Madhya Pradesh and

Maharshtra, and v) establishment of one regional soil testing laboratory in north-eastern region.

In order to make fertilisers available in interioi and inaccessible areas in 243 districts, another scheme has been sanctioned for opening 100 additional fertiliser retail outlets in each district. Funds amounting to Rs 291.60 lakh have been released for implementing the scheme during 1988-89.

SOIL AND WATER CONSERVATION

Soil and water conservation measures have been accepted as one of the essential inputs for increasing agricultural output in the country. These programmes were first launched during the First Five Year Plan. From the very beginning, the emphasis has been on the development of technology for problem identification, formulation and implementation of problem-oriented schemes, enactment of appropriate legislation and constitution of policy coordination bodies. While the conceptual framework of soil and water conservation activities in the country has not changed, the content of the programmes has undergone considerable revision during the successive Five Year Plans. The main objectives of the schemes in operation are: to slow down the process of erosion and land degradation; to restore degraded lands; to improve and ensure availability of water and soil moisture; to create micro-level irrigation through water harvesting; to ensure regeneration/enhancing of international fertility of soil through organic recycle particularly in resource-poor regions; to enlarge effective productive exploitation zone to the deeper soil profile by adopting mixed and companion farming system; to increase aggregate bio-mass production; to generate employment through continuous adjustments in optimum land use planning and to ensure collective security against recurring droughts and floods.

The programmes under the state plan aim at conservation of soil and water mainly on agricultural lands with some components of land reclamation, soil and land use survey and raising of utility trees on private and common lands. The programmes sponsored by Soil and Water Conservation Division at the national level in the Department of Agriculture and Cooperation provide an overall perspective of problems like water and wind erosion, degradation through water-logging, salinity, ravines, torrents, shifting cultivation, coastal sand in addition to the declining man-land ratio, increasing and competing demands for land, diversion of arable land, loss of productivity and favourable provision of water into production systems as well as information on problems and potential of various land uses. The major Central/Centrally-sponsored schemes have been directed towards checking premature siltation of the multi-purpose reservoirs, mitigating the flood hazard in productive plains, re-settling of shifting cultivators and restoring degraded lands.

CENTRALLY-SPONSORED SCHEMES

A Centrally-sponsored scheme of soil conservation in the catchments of river valley projects, launched during the Third Five Year Plan, to prevent premature siltation of multi-purpose reservoirs, is now being implemented in 27 catchments covering 17 states including Damodar Valley Corporation area. The Soil and Water Conservation programme implemented in critically degraded watersheds ranging between 2,000 to 4,000 hectares in area is being delineated by All India Soil and Land Use Survey Organisation. The scheme has got inbuilt facilities for collecting a silt load data along with various characteristics of watersheds under treatment. By the end of 1987-88, an area of 22.16 lakh hectares was treated under the programme at the cost of Rs 253.81 crore. The scheme is continued during the Seventh Plan. In addition to concurrent appraisal by the project implementing authorities and Soil and Water Conservation Division of the Ministry of Agriculture, the conservation work is also being evaluated by the external agencies, *viz*., Administrative Staff College of India (Hyderabad) and Agricultural Finance Corporation (Bombay).

The other Centrally-sponsored scheme of Integrated Watershed Management in the catchments of flood-prone rivers, was launched during the Sixth Plan in eight flood-prone rivers of the Gangetic Basin covering seven states and one union territory. The scheme aims at enhancing the ability of the catchment by absorbing larger quantity of rainwater, reducing erosion and consequent silt load in the stream and river beds and, thus, helping to mitigate the fury of floods in the productive plains. An area of 3.82 lakh hectares was treated till the end of 1987-88 incurring an expenditure of Rs 66.29 crore. This scheme too is being continued during the Seventh Plan.

A scheme for reclamation and development of ravine areas had been launched in 1987-88 in the three dacoit-infested states of Madhya Pradesh, Uttar Pradesh and Rajasthan with an outlay of Rs 12 crore. The major components of the Ravine Reclamation Programme are: peripheral bunding to halt any further ingress of ravines, table-land treatment in the vicinity of upstream of peripheral bund, afforestation and medium and deep ravines for fuel, fodder, etc., and reclamation of shallow ravines with provisions of irrigation, wherever possible, in order to rehabilitate the degraded lands for cultivation/horticulture purposes. During 1987-88, an amount of Rs 6 crore has been spent on these activities. The major components of the integrated watershed management programme are: protection of table-land, reclamation of shallow ravines, stabilisation for cultivation or horticultural plantation wherever irrigation has been made available and stabilisation of medium and deep ravines through afforestation for building fuel-fodder reserves. Evaluation of the scheme is being carried out by the Indian Institute of Management, Ahmadabad.

For controlling shifting cultivation and permanently settling *Jhumia* (shifting cultivators), a pilot scheme was implemented in Arunachal Pradesh and Mizoram during 1981-87. In continuation, a large scale scheme to settle 25,000 Jhumia families in a period of five years was launched in nine states during 1987-88. The states include Arunachal Pradesh, Assam, Meghalaya, Manipur, Tripura, Nagaland Mizoram, Orissa and Andhra Pradesh. A sum of Rs 750 lakh was invested in 1987-88 in different activities such as land development, irrigation, agriculture, horticulture, cottage industries, fisheries, social and fuelwood/forestry and minimum housing programmes for the purpose. Eventually one to two hectares of developed and economically yielding lands would be allotted to each family. During 1988-89, so far, a sum of Rs 1,500 lakh was allocated and Rs 536 lakh released under this scheme.

All India Soil and Land Use Survey Organisation with its seven regional/sub-regional centres throughout the country, has been continuing the work of catchment delineation, codification and fixation of *inter-se* priorities of watersheds for development. In addition, through a joint programme with Space Application Centre/ISRO, the Organisation has completed catchment characterisation studies in both the catchments of the Ukai and the Giribata. This includes identification and assessment of soil erosion, land degradation and sediment yield problems *vis-a-vis* land use. The Organisation continued to provide support to determination of hydrologic soil groups, infiltration characteristics, building up of National Natural Resources Data Systems, etc. Till the end of 1987-88, the Organisation had conducted detailed soil survey of over 90.64 lakh hectares, priority delineation survey of over 808.38 lakh hectares, special soil survey on 18.05 lakh hectares and sample soil survey in 7,818 sample blocks (each of 64 hectare) in different states of the country. The Organisation has also participated in improving methodology by applying remote sensing technology and keeping abreast with the present trend in the country and abroad. It also provides support to areas under coal mining activities and in preparation of appropriate rehabilitation programme.

Watershed Development Council was constituted for coordination and execution of World Bank assisted projects namely: (i) Himalayan Watershed Management Project in Uttar Pradesh and (ii) Pilot Project for Watershed Development in rainfed areas of Andhra Pradesh, Karnataka, Madhya Pradesh and Maharashtra.

The objective of the first project which is being implemented in two selected watersheds, is to minimise further deterioration of the Himalayan eco-system caused by depletion of forests, overgrazing, bad land use and careless road construction activities. The second project is being implemented in eight watersheds, two in each state, with the objective of verifying the technology packages which are applicable under different environmental and social conditions to ensure stability of production in the rainfed areas of the concerned states.

LAND USE AND CONSERVATION

National Land Use and Conservation Board (NLCB) is concerned primarily with the National Land Use Policy, perspective plan of conservation, management and development of land resources in the country, prevention of the indiscriminate diversion of good agricultural land for other uses and taking up measures for promoting scientific management of land use and conservation. This Board also coordinates the work of State Land Use Boards (SLUB) set up in different states and union territories.

In order to activate the SLUBs, a Centrally-sponsored scheme has been launched to assist the states in creating nucleus cells and also sponsoring studies, workshops, seminars, etc. A study group set up by the NLCB has been examining in consultation with the states, various aspects of the working of SLUBs. In compliance with the decision of the first meeting of the National Land Use and Wasteland Development Council under the chairmanship of Prime Minister as follow-up to the approved National Land Use Policy, the states have been requested to undertake the job of drawing up perspective plans for assessment, development and management of natural resources particularly of land. Similarly, the Central government has entrusted the job of preparing regional perspective plans for conservation, development and management of natural resources for the states of northern, central and western regions to identify institutes. A study titled 'Himalayan State of Environment Call For Action' has been completed under the sponsorship of NLCB. Similarly, a Committee of Experts has recommended for continued use of existing methodology for delineation, coordination and fixation of *inter-se* priorities for the purpose of planning and implementation of catchment treatment works. Besides, under the sponsorship of the NLCB, the Administrative Staff College of India, Hyderabad and the Indian Institute of Management, Ahmadabad, have completed the evaluation studies of the soil conservation works in the catchments of the Machkunds, the Pochampad and the Sahibi.

In order to update the professional competence, short orientation courses are being organised in the field of hydrologic and sediment monitoring of small watersheds, data collection and utilisation, soil and land survey, water harvesting and bunding and terracing, etc. These activities are generally sponsored through Soil Conservation Training Centres located at Hazaribagh, DVC and also at Chatra, Nepal.

AGRICULTURAL IMPLEMENTS

Agricultural machinery and implements play a very crucial role in increasing agricultural productivity. In fact, these constitute a basic input. On the one hand, they help to get the best results out of other inputs like seeds, fertilisers, water and plant protection chemicals and on the other, they assist in increasing the cropping intensity by reducing the time for seeds-bed preparation and harvesting and threshing.

In 1983-84, a thrust was given to the programme of popularisation on improved animal-drawn agricultural implements and hand-tools. The programme envisaged providing a suitable technology to the farmers in the dryland area. Emphasis was laid on the adoption and use of seed-cum-fertiliser drills.

The scheme for establishment of Farmers' Agro-Service Centre and popularisation of improved implements and hand-tools covers 500 dryland blocks of 10 states. Extensive demonstrations at the block level are planned to make the farmers convinced about the suitability and profitability of using improved implements and tools besides establishment of customs-hiring centres. Subsidy is provided to small and marginal farmers for purchasing identified implements and hand-tools.

A Central Agricultural Implements Review and Release Committee was also constituted in 1983 to coordinate the research and development work in the field of agricultural machinery and to make available the latest improved agricultural tools and implements to the farmers suiting to different agro-climatic zones. Till August 1988, 34 such tools and implements have been identified and released by the Committee for popularising the same in the country.

A Central legislation namely Dangerous Machines (Regulation) Act, 1983 has also been enacted to ensure the supply of good quality power threshers to the farmers conforming to standards of Bureau of Indian Standards. The provisions of the Act stipulate payment of compensation to the operators in the event of injury/death while working on these machines. The states of Haryana, Jammu and Kashmir and the Union Territory of Delhi have already enforced the Act in their respective territories. Other states/union territories are in the process of implementation of the Act.

FARM MACHINERY INSTITUTES

Farm Machinery Training and Testing Institutes at Budni in Madhya Pradesh, Hisar in Haryana and Garladinne in Anantapur district of Andhra Pradesh, impart on-the-job training in the selection, operation and maintenance of farm machinery. The institutes are also engaged in testing of tractors and other agricultural machinery as a service to users and manufacturers. A proposal to set up two more such institutes in the eastern and western regions of the country, is under consideration.

STATE AGRO-INDUSTRIES CORPORATIONS

Nineteen state agro-industries corporations have been set up in the country to develop and manufacture suitable equipment to increase the productivity, processing of agricultural produce, setting up of agro-based industries, distribution of agricultural inputs and providing customs-hiring services to the farmers.

The corporations have taken up distribution of tractors, agricultural implements, pump sets, bullockcarts, customs-hiring services for agricultural operations and land reclamation, manufacturing of granulated fertilisers, compost and Rhizhobium culture, pesticides and establishment of agro-based industries, such as fruit processing, vegetable canning, cattle and poultry feed, *dal* mills, oil extraction, etc.

PLANT PROTECTION

Integrated Pest Management continued to be the main plank of plant protection to minimise over-dependence on the use of chemical pesticides and adoption of other techniques for averting the crop damage due to pests and diseases. In this process, surveillance for pest-monitoring and their control by biological means has been given priority. The pest surveillance service is provided by 32 Plant Protection and Surveillance Stations. Eleven Central Biological Control Stations apart from conserving predators/parasites, undertake mass release of natural enemies for suppressing the pest population. In addition, demonstrations in farmers' fields on Integrated Pest Management have been laid for the benefit of farmers and field officers.

Anticipating the possible threat of locust invasion as has been forecast by FAO, concerted efforts have been made by the Locust Warning Organisation (which keeps a constant vigil through its 34 outposts on locust activity in Scheduled Desert Area) to remain in full preparedness to meet the possible invasion, as a result of which the country remained free from locust swarms.

Screening of plants and plant materials imported from various countries and those meant for export is undertaken by 26 plant quarantine and fumigation stations located at major international airports, seaports and land frontiers. This is done mainly with a view to preventing the entry of exotic pests and diseases through international trade.

In order to ensure the availability of quality pesticides to the farmers, the Central Insecticide Laboratory with its two branches located at Hyderabad and Bombay and two regional pesticide testing laboratories located at Kanpur and Chandigarh, continued to augment the efforts. As required under the Insecticides Act, 1968, the Registration Committee considered applications received for the grant of registration certificates and 1,750 registrations were granted. Besides, 27 new chemicals were also approved for inclusion in the list of pesticides in the Schedule to this Act.

To supplement the efforts of the states in training of officials on various aspects of plant protection technology, the Central Plant Protection Training Institute, Hyderabad continued to organise several long-term and short-term courses.

Plant protection is advocated to be taken up on compact area basis to achieve perceivable results. Therefore, to facilitate the farmers undertaking plant protection measures simultaneously, financial assistance is being extended under Centrally-sponsored scheme for controlling pests of agricultural importance.

The targetted demand of pesticides has been estimated at 75,000 tonnes (technical grade). The major requirement of pesticide was met through indigenous production and their availability remained satisfactory. In order to supplement the efforts in ensuring the availability of seven commonly and indigenously manufactured pesticides are allocated to various states under 50 per cent distribution scheme of Government for getting them formulated through the state-based non-associated formulators.

HIGH-YIELDING VARIETY PROGRAMME

This programme was started in 1966-67. This is a major plank of agriculture strategy for increasing production of foodgrains in the country. The cropwise details are shown in table 15.3.

TABLE 15.3 AREA UNDER HIGH-YIELDING VARIETY PROGRAMME

(Lakh hectare)

Crop	1966-67	1985-86	1986-87	1987-88[1] Ant. Ach.	1988-89[2] (Target)
Paddy	8.9	234.74	240.22	207.54	290.00
Wheat	5.4	190.75	191.42	196.07	220.00
Jowar	1.9	60 82	55.00	54.35	60.00
Bajra	0.6	49.92	52 64	34.85	55.00
Maize	2.1	17 99	21.90	19.45	25.00
Total	18.9	554 22	561.18	512.26	650.00

The main objectives of the programmes for increasing foodgrains production during Seventh Plan *inter-alia* include: (i) to achieve self-sufficiency in foodgrains with the complete elimination of imports; (ii) imparting greater stability of foodgrains production; (iii) acceleration of growth rate in the production of pulses and coarse grains, and (iv) to protect the interests both of farmers and consumers through price support and better distribution measure.

High-yielding variety programme is supported by the Central sector scheme of: (i) minikit programmes of rice, wheat, jowar, bajra, maize and ragi; (ii) maize demonstrations in tribal/backward areas, and (iii) state-level training of extension workers.

The minikit demonstration programme aims at popularising newly released varieties and getting the newly evolved varieties tested under field conditions. For this a large number of seed minikit-containing 0.25 kg—5 kg, seeds are distributed free of cost to farmers.

The objective of maize demonstrations in backward and tribal areas is to increase the adoption of latest maize production technology, to bring about an increase in the per unit area production of maize and to improve the economic condition of backward and tribal farmers.

The programme of organising state-level training courses in improved production technology of various crops, is held at the agricultural universities and research institutes in collaboration with the concerned state agriculture department.

Rust-resistant varieties of wheat seed are supplied free of cost to farmers in hilly areas of north and south where wheat rust column builds up in the off season of summer and subsequently spreads to the plains in main crop season.

DRYLAND/RAINFED FARMING

Agricultural development in the country so far had been made only towards the irrigated areas whereas the vast dryland/rainfed areas which account for about 70 per cent of net cultivated area still remain neglected. Dryland farming is being practised in over 10.2 crore hectares out of 14.2 crore hectares of the total cropped land in the country. Bulk of nutritionally vital crops like pulses and oilseeds comes from these areas. A large portion of industrially important crops like cotton and groundnut and staple food like jowar, bajra, maize, etc., are cultivated under rainfed conditions. The growth in production and productivity of important rainfed crops has been much slower resulting in a decrease of per capita availability of pulses and edible oils. As such, the development of agriculture in India has now reached a stage when more reliance has to be placed on dryland/rainfed areas for national food security, correction of regional and nutritional imbalance and generation of widespread rural employment in the hinterlands.

Crop production under the rainfed conditions is marked by erratic and unpredictable rainfall pattern creating an atmosphere of high risk and insecurity. This stops the dryland farmers from investing in inputs like seeds, fetilisers, plant protection measures, etc.

Development of watershed, which is geohydrological unit or a piece of land that drains at common points, has been accepted as a national approach and strategy for development of dryland areas. The Government had suggested to states/union territories to make all-out efforts for boosting up of production levels in these areas.

Many states and union territories have identified about 13,472 micro-watersheds for comprehensive and systematic development covering an area of about 98,79,240 hectares. Each micro-watershed will cover an area of about 1,000 hectares and the programme includes management of rainwater, land development, use of improved seeds of drought-resistant varieties and fertilisers, plantation of forest and fruit trees, development of animal husbandry and allied activities.

A pilot project for watershed development in rainfed areas, has been taken up with the assistance of World Bank. The project envisages the development of identified watershed of about 25,000-30,000 hectare area each in Madhya Pradesh, Maharashtra, Andhra Pradesh and Karnataka. The project has been initiated at field level to lay basis of sound investment on large scale for: (a) reversing man-made ecological degradation that has been going on in the lower foothills of the Himalayas for decades and (b) protecting and developing agricultural land which is presently subject to serious erosion and flooding.

A comprehensive project namely Kandi Watershed at a total cost of Rs 59.88

crore, was in operation since 1980 in Punjab with the assistance of World Bank. The basic objective of this project was to restore ecological balance in the Himalayan foothills (Kandi area, Punjab) with multi-disciplinary programmes of soil conservation, irrigation, horticulture, fishery, animal husbandry and research support, etc. During implementation, this project has been tilted towards irrigation component which is very costly and has been able to provide support for restoration of ecological balance. This project was completed on 31 March 1988.

On the basis of experience gained in this project as well as encouraging results obtained in the on-going projects elsewhere in the country on watershed development for land stabilisation, and at the instance of World Bank, a new project namely Integrated Watershed Development (Hills) in Jammu and Kashmir, Punjab, Himachal Pradesh and Haryana is awaiting World Bank assistance.

The two on-going schemes on propagation of water conservation/harvesting technology and popularisation of seed-cum-fertiliser drills, growing of improved varieties etc., for development of dryland areas taken up during 1983-84, have been merged in the new Centrally-sponsored scheme of 'National Watershed Development Programme for Rainfed Agriculture' being implemented during Seventh Plan from 1986-87 to improve the production and productivity of vast dryland/rainfed areas in the country. The programme is in operation in 16 states covering 99 districts. Its objectives are: (i) taking watershed as a basis to conserve and upgrade crop lands and waterlands as vital natural resources; (ii) to develop and demonstrate location-specific technologies for the proper soil and moisture conservation measures and crop production stabilisation measures required under different agro-climatic conditions, and (iii) to augment fodder, fruit and fuel resources of village communities by use of appropriate alternate land use system. The main features of the scheme are: (i) land and moisture management for introduction of cropping system including dryland, horticulture, fodder production and farm forestry; (ii) contingency seed-stocking and supply of seedlings and grass seed/slips; (iii) training; (iv) adaptive research and activity; (v) provision of survey equipment and fabrication of new tools, and (vi) preparation of field manual. The total cost of the scheme for the four years of Seventh Plan was Rs 239 crore, of which Central government share was Rs 120 crore. The programme is to cover 9.28 lakh hectares with annual target of 2.32 lakh hectares.

CROP PRODUCTION

The area, production and yield of principal crops of selected years is shown in table 15.4.

HORTICULTURE

Horticulture covers a group of crops such as fruits, vegetables, plantation crops,

AGRICULTURAL PRODUCTION

(IN LAKH TONNES)

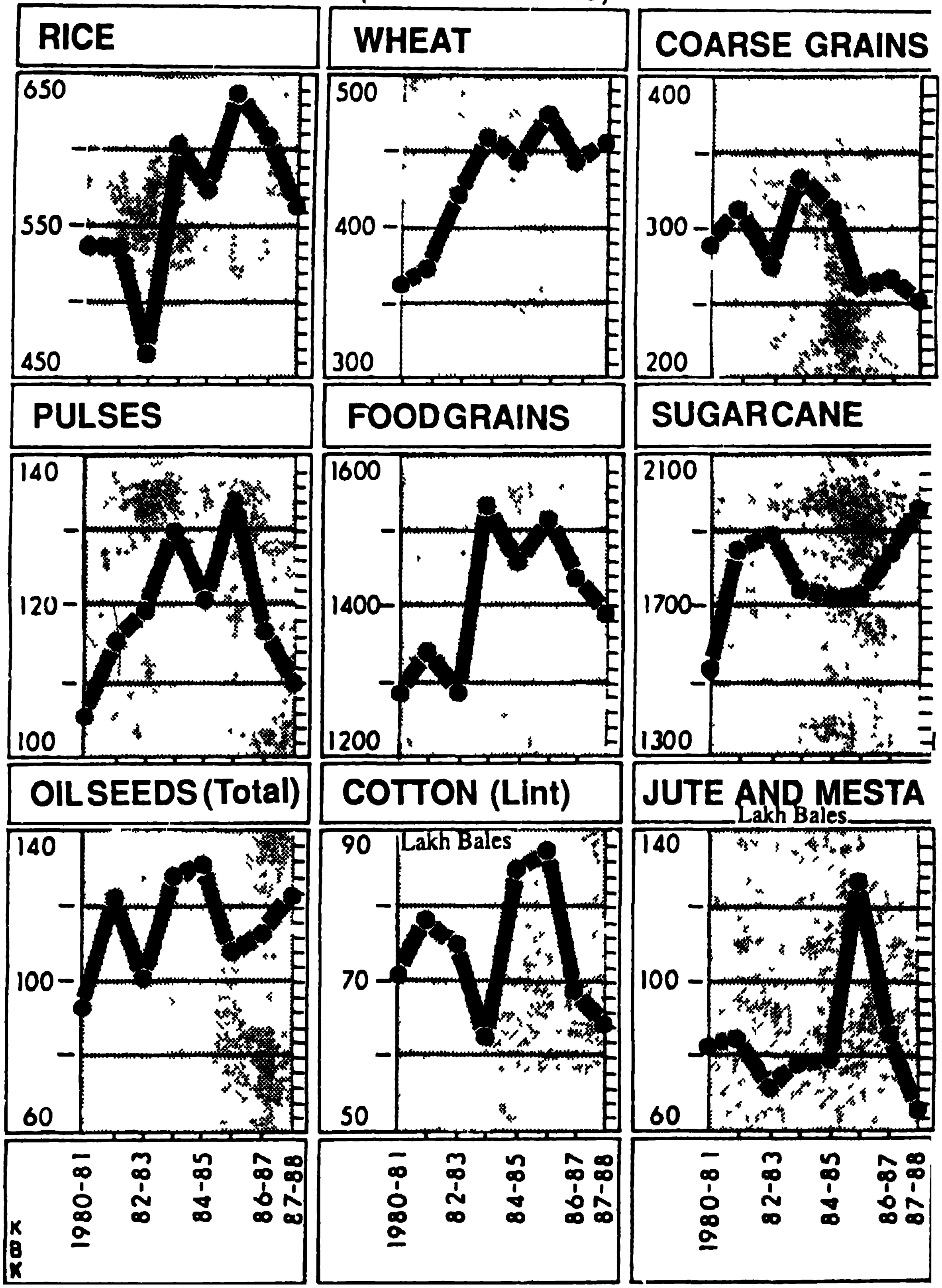


TABLE 15.4 AREA, PRODUCTION AND YIELD OF PRINCIPAL CROPS—ALL INDIA

Crop		1950-51	1960-61	1970-71	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
Rice	A	388.10	341.28	375.92	401.52	407.08	382.62	412.44	411.59	411.37	411.67	383.19
	P	205.76	345.74	422.25	536.31	532.48	471.16	600.97	583.36	638.25	605.57	564.34
	Y	668	1,013	1,123	1,336	1,308	1,231	1,457	1,417	1,552	1,471	1,473
Wheat	A	97.46	129.27	182.41	222.79	221.44	235.67	246.72	235.65	229.97	231.31	226.04
	P	64.62	109.97	238.32	363.13	374.52	427.94	454.76	440.69	470.52	443.23	450.96
	Y	663	851	1,307	1,630	1,691	1,816	1,843	1,870	2,046	1,916	1,995
Jowar	A	155.71	184.12	173.74	158.09	165.99	163.76	164.32	159.39	160.97	159.48	156.48
	P	54.95	98.14	81.05	104.31	120.62	107.53	119.19	114.02	101.97	91.85	118.47
	Y	363	533	466	660	727	657	725	715	633	576	757
Bajra	A	90.23	114.69	129.13	116.57	117.84	109.42	118.32	106.19	106.52	112.66	86.92
	P	25.95	32.83	80.29	53.43	55.37	51.31	77.26	60.47	36.64	45.14	32.82
	Y	238	286	622	458	470	469	653	569	344	401	378
Maize	A	31.59	44.07	58.52	60.05	59.35	57.20	58.59	58.00	57.97	59.23	55.42
	P	17.29	40.80	74.86	69.57	68.97	65.49	70.22	84.42	66.44	75.93	56.29
	Y	547	926	1,279	1,159	1,162	1,145	1,352	1,456	1,146	1,282	1,016
Total Cereals	A	732.30	920.18	1,017.82	1,042.10	1,052.95	1,022.62	1,076.21	1,039.36	1,036.05	1,040.39	971.47
	P	424.14	693.14	966.04	1,189.62	1,217.88	1,176.62	1,394.80	1,335.76	1,370.79	1,317.11	1,273.74
	Y	542	753	949	1,142	1,157	1,151	1,296	1,285	1,323	1,266	1,311
Gram	A	75.70	92.76	78.39	65.84	78.68	73.99	71.61	69.04	78.05	69.84	58.06
	P	36.51	62.50	51.99	43.28	46.42	52.90	47.51	45.62	57.88	45.32	36.22
	Y	482	674	663	657	590	715	663	661	742	649	624
Total Pulses	A	190.91	235.63	225.34	224.57	238.43	228.33	235.42	227.37	244.18	231.56	215.59
	P	84.11	127.04	118.18	106.27	115.07	118.57	128.94	119.63	133.61	117.07	110.40
	Y	441	539	524	473	483	519	548	526	547	506	512
Total Foodgrains	A	973.21	1,155.81	1,243.16	1,266.67	1,291.38	1,250.95	1,311.63	1,266.73	1,280.23	1,271.95	1,187.06
	P	508.25	820.18	1,084.22	1,295.89	1,332.95	1,295.19	1,523.74	1,455.39	1,504.40	1,434.18	1,384.14
	Y	522	710	872	1,023	1,032	1,035	1,162	1,149	1,175	1,128	1,166
Groundnut	A	44.94	64.63	73.26	68.01	74.29	72.15	75.39	71.68	71.25	69.82	67.34
	P	34.81	48.12	61.11	50.05	72.23	52.82	70.85	64.36	51.21	58.75	56.73
	Y	775	745	834	736	972	732	940	898	719	841	842

TABLE 15.4 (continued)

Crop		1950-51	1960-61	1970-71	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
Rapeseed and Mustard	A	20.71	28.83	33.23	41.11	43.99	38.27	38.74	39.87	39.80	37.19	45.08
	P	7.62	13.47	19.76	23.04	23.81	22.07	26.08	30.73	26.81	26.05	33.70
	Y	368	467	594	560	541	577	673	771	674	700	748
Total nine Oilseeds	A	107.27[1]	137.70[1]	166.44	176.03	189.07	177.55	186.89	189.24	190.20	186.26	200.00
	P	51.58[1]	69.82[1]	96.30	93.72	120.80	99.95	126.92	129.46	108.33	112.70	123.78
	Y	481[1]	507[1]	579	532	639	563	679	684	570	605	619
Sugarcane	A	17.07	24.15	26.15	26.67	31.93	33.58	31.10	29.53	28.49	30.79	32.87
	P	570.51	1,100.01	1,263.68	1,542.48	1,863.58	1,895.06	1,740.76	1,703.19	1,706.48	1,860.89	1,967.23
	Y	33,422	45,549	48,322	57,844	53,859	56,441	55,978	57,673	59,898	60,444	59,851
Cotton (Lint)[2]	A	58.82	76.10	76.05	78.23	80.57	78.71	77.21	73.82	75.33	69.48	64.71
	P	30.44	56.04	47.63	70.10	78.34	75.34	63.87	85.07	87.28	69.05	64.32
	Y	88	125	106	152	166	163	141	196	197	169	169
Jute[3]	A	5.71	6.29	7.49	9.41	8.26	7.34	7.60	8.33	11.46	8.03	6.98
	P	33.00	41.34	49.38	65.08	67.88	59.46	63.25	65.31	108.86	73.53	58.00
	Y	1,043	1,183	1,186	1,245	1,480	1,458	1,498	1,411	1,710	1,649	1,495
Masta[3]	A	NA	2.74	3.31	3.59	3.24	2.86	2.93	2.96	3.48	2.65	2.62
	P		11.29	12.55	16.52	15.82	12.25	13.99	12.56	17.61	12.73	9.92
	Y		742	684	828	881	771	858	764	910	865	674

1. Five major oilseeds *viz.*, Groundnut, Rapeseed, Mustard, Castorseed and Lineseed
2. Production in lakh bales of 170 kg each
3. Production in lakh bales of 130 kg each.

A—Area in lakh hectares; P—Production in lakh tonnes; Y—Yield in kg per hectare

Year relates to crop year July-June.

floriculture and aromatic and medicinal plants. India is endowed with varied agro-climatic conditions suitable for growing varieties of temperate, tropical and sub-tropical fruits, vegetables, ornamental plants, spices, plantation crops, etc. The development of horticulture has importance not only for increasing the supply of nutritive foods like fruits and vegetables, but also for improving the rural economy by generating employment and income particularly for small and marginal farmers.

The National Horticulture Board was set up in April 1984 with headquarters at Gurgaon near Delhi. The main objective of the Board is to see that the development of horticulture industry takes place in an integrated manner. The Board has taken the programmes on development of fruits and vegetables, post-harvest handling, processing and promotion of export and domestic marketing. The Board has implemented a number of programmes during 1988-89.

With a view to strengthening the supply of quality planting material of fruit trees, the Board has taken up a scheme for production and supply of quality planting material in 19 states. It is targetted to cover 21 nurseries during 1988-89. Twenty important terminal markets of the country are being inter-linked for collection and dissemination of the data relating to daily rates, market trend/behaviour of fruits and vegetables of commercial importance. The Board has sanctioned a scheme to provide financial assistance to agro-horticultural corporations and other apex cooperative organisations in marketing and processing of fruits and vegetables. So far 375 vending machines have been supplied under this programme. The Board has proposed a national project on post-harvest management which envisages movement of the produce in re-cyclable plastic crates which will ensure supply of fruits and vegetables at optimal freshness. The Board has also proposed to provide financial assistance to state governments under the programme, techno-economic surveys on different aspects of horticulture industry. Eight hundred and fifty farmers have been targetted to be trained during 1988-89 for transfer of technology. A pilot project for storage of potatoes through passive evaporative cool stores is being implemented for reducing post-harvest losses of potatoes. Fifty four passive evaporative cool stores have been targetted to be established in 1988-89.

For increasing production of fruits a Centrally-sponsored scheme on package programme on banana in Goa and package programme on pineapple in Arunachal Pradesh and the Andaman and Nicobar Islands is in operation.

A Central sector scheme for establishment of elite progeny orchards is being implemented at 10 farms of the SFCI. Under the scheme elite progeny nurseries have been set up for production and supply of high-yielding planting material of proven quality and for demonstration of improved horticultural practices.

The Indo-Bulgarian Joint Commission for Economic, Scientific and Technical Cooperation signed an agreement in 1986 in Sofia under which Bulgarian side agreed to render technical assistance and support for setting up demonstrations in India on apple production with Bulgarian technology. An apple demonstration farm of 50 hectares will be set up in Jammu and Kashmir with the assistance of Bulgaria. At this farm, 25 hectares will be covered under red delicious spur variety of apple imported from Bulgaria. In the remaining 25 hectares, indigenous Ambri variety will be grafted on root-stock imported from Bulgaria.

An Indo-Italian project on temperate climate fruit crops is being implemented since 1984 in Jammu and Kashmir, Himachal Pradesh and Uttar Pradesh. The temperate fruits covered under the project are olive, hazelnut, almond and walnut. The first phase of the project was completed in August 1987. The components of the project included: (i) planting of fruit trees of selected species and varieties including their mother plants as well as laying out of demonstration plots; (ii) setting up of fruit nurseries for the production of planting material for distribution among farmers; (iii) training of personnel; (iv) establishment of small agro-industrial units for processing of fruits (extraction of oil from olive fruit, shelling of hazelnut and almond, drying of fruits etc.), and (v) marketing including storage, transport and packing. Under the project, olive plants and other fruit varieties received from Italy were planted in the three project states. Agricultural machinery, laboratory equipment and processing equipment were also imported from Italy as gift and were distributed to these states. As the assessment of the performance of varieties introduced from Italy will be possible only in the next few years, Phase-II of the project has been prepared and Government of Italy has been requested to implement this phase up to December 1990.

During 1988-89, it is proposed to maintain an area of 7,953 hectares planted under the World Bank aided multi-state cashew project, besides covering an area of 2,400 hectares under area expansion programme by planting seedlings of cashewnut. One thousand and five hundred hectares are proposed to be covered under the scheme for area expansion by planting epicotyl grafts. The programme for imporvement of cashewnut vegetative propagation and establishment of close planted budwood nurseries is also being implemented during the year 1988-89. Under this programme 57.5 units of scion banks are being maintained and an area of 2,450 hectares is to be covered. Three thousand hectares clonal orchards are proposed to be established during 1988-89. Two thousand five hundred and fifty new demonstration plots will be laid out in the ryots fields to demonstrate the efficacy of improved agro-techniques. Three thousand seven hundred hectares will be covered during 1988-89 under the programme for adoption of pest management practices for which a subsidy of Rs 250 per hectare is provided to meet the cost of plant protection chemicals and application charges.

Coconut Development Board is implementing various projects for increasing production and productivity of coconut in the country. These schemes include expansion of area, production of quality coconut seedlings, establishment of hybrid seed gardens, promotion of primary processing and marketing activities, assistance for irrigation facilities and plantation of coconut on canal embankments in Orissa and *khas* land in Tripura. During 1988-89, Coconut Development Board has procured 5.5 lakh quality seednuts from disease-free locations and supplied to various states/union territories. It is proposed to cover 2,800 hectares during 1988-89 for expansion of area under coconut plantations. Three lakh seedlings planted on canal embankments in Orissa in the previous years are being maintained during 1988-89. Six thousand and five hundred seedlings are planted and maintained on the canal embankments of Karnataka. An area of 212 hectare planted with coconut in khas land in Tripura is being maintained.

Government of India and World Bank have jointly set up a project preparation team for development of horticulture in north-west hill region. The project preparation was started in November 1988. The project proposed for development of temperate horticulture will include apple and other temperate fruits, vegetables and flowers. The programme will aim at improving productivity and quality, regulating supply to the market, increasing sufficient number of market systems, diversification of crops specially in marginal apple production areas. The project components include strengthening of extension services, development of regional technical resource centres, production of quality planting material, development and adoption of post-harvest facilities, training of extension workers and farmers.

ANIMAL HUSBANDRY

Animal husbandry is an integral part of agriculture in India. It provides gainful employment particularly to small and marginal farmers and agricultural labourers. India's livestock resources have considerable genetic diversity within species with many traits of adaptability to withstand envorinmental stress and inadequate levels of nutrition and management. Livestock also provides variety of raw material for industrial use and draught-power for various agricultural and other operations. Special emphasis is, therefore, being laid on projects and programmes for enhancing the production of various species of livestock through genetic improvement and effective health cover.

CATTLE/BUFFALOES DEVELOPMENT

India possesses several good breeds of tropical cattle and best breeds of buffaloes in the world. India's cattle are well known for their quality of hardiness, endurance and resistance to tropical animal diseases especially to the tick-borne protozoan infections. Because of these qualities, Indian cattle and buffaloes are sought internationally. According to livestock census (1982), there were 19.24 crore cattle and 6.98 crore buffaloes in India constituting about one sixth and one half of the world cattle and buffalo population respectively. Recognising the importance of cattle in the rural economy of the country and their contribution to national income, both the Central and state governments are devoting considerable attention to the development of cattle and buffaloes. The important state sector schemes initiated for development of cattle and buffaloes are: Key Village Blocks (KVBs) and Intensive Cattle Development Projects

(ICDPs). These schemes aim at all-round development of cattle and attend to all aspects of cattle development in a planned and coordinated manner. Under these schemes, about 15,000 artificial insemination (AI) centres have been set up to provide inputs and extension support in rural areas. The number of AI with exotic bull semen has increased from 84 lakh during 1984-85 to 100 lakh during 1988-89.

Seven Central cattle breeding farms at Suratgarh (Rajasthan), Dhamrod (Gujarat), Alamadi (Tamil Nadu), Chiplima (Orissa), Semiliguda (Orissa), Andeshnagar (UP) and Hesserghatta (Karnataka) are engaged in scientific cattle breeding programme and progeny testing of selected breeds of indigenous as well as exotic cattle and buffaloes. These farms have distributed about 2,300 bulls/bull-calves of high genetic merit for breeding.

A massive programme for genetic improvement of cattle and buffaloes using frozen semen technique for efficient artificial insemination has been taken up in different states. Government of India is supplementing the efforts of the state governments through a Central sector scheme on Extension of Frozen Semen Technology for Cattle and Buffalo Development. In the Sixth Five Year Plan, 14 states were provided financial assistance to modernise 14 bull stations, and set up 38 frozen semen banks and 4,749 field AI centres. During the Seventh Five Year Plan, Central assistance has also been provided to 13 states to strengthen three bull stations, 11 FS banks, 1,400 field AI centres and eight training centres.

Production of proven/superior cross-bred bulls is an essential activity in cattle breeding programme. A Central sector scheme for production of proven bulls by progeny-testing under field conditions has also been taken up in some states. During the Sixth Five Year Plan, 173 cross-bred bulls were test-mated under the programme in Kerala, Punjab and Assam. During the current Plan period, the programme has been covered in two more states, namely, Orissa and Andhra Pradesh. Two hundred and thirty bulls have been put under test-mating programme in order to find out proven bulls for use in the cross-breeding programme for further improvement of milk production in the cross-bred cows.

The mid-term review of the Sixth Plan laid emphasis on improvement of well recognised indigenous breeds of cattle and buffaloes. Accordingly, a Centrally-sponsored scheme envisaging strengthening of infrastructural facilities at existing state cattle/buffalo breeding farms for housing the animals, production of fodder, development of irrigation facilities and purchase of animals was initiated during the year 1984-85 and the same is being continued in the Seventh Plan. Under the scheme, financial assistance was provided to the governments of Andhra Pradesh, Haryana, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Punjab, Rajasthan and Uttar Pradesh for development of 13 state cattle breeding farms of well recognised indigenous breeds such as Khillar, Gaolao, Deoni, Nagore, Kankrej, Halliker, Sahiwal, Hariana, Malvi breeds of cattle and Murrah breeds of buffaloes. During 1988-89, financial assistance had been extended for the development of three more farms.

A scheme of Special Livestock Breeding Programme (SLBP) with the objectives of: (a) involving small/marginal farmers and agricultural labourers in livestock production and (b) generating additional employment and income, is in operation in selected districts of the country. The SLBP consists of two components, namely: (i) rearing of calves (ROC) and (ii) setting up of sheep, poultry, piggery, etc., production units. The programme has a mix of subsidy and loan arranged through financial institutions. During Seventh Plan a number of modifications have been made in the programme to make it more effective and offer wider choice of vocations to farmers. It is envisaged to assist 5.14 lakh beneficiaries during the Seventh Plan. An important ingredient of farmers' induction and training has also been introduced. The expenditure on the programme is shared on 50: 50 basis between Central and state governments and cent per cent expenditure is borne by the Government of India in the case of union territories.

As a result of the implementation of these schemes, significant progress has been made in the field of cattle and buffalo development. Consequently country's milk production increased from 302 lakh tonnes in 1979-80 to 461 lakh tonnes in 1987-88.

POULTRY DEVELOPMENT

Poultry is one of the important components of farmers' economy. It provides additional income and job opportunities to a large number of rural population. Besides, poultry is the most efficient convertor of foodstuffs into human food of high nutritional value in shortest time. Due to continuous and concerted efforts of both public and private sector, there has been considerable increase in both egg and poultry meat production. The annual egg production which was 180 crore in 1950-51 increased to about 1,780 crore in 1987-88. Broiler production which was virtually non-existent during 1961 exceeded the level of 9.0 crore birds during 1987-88 and 10 crore birds during 1988-89. The Central government has initiated some important programmes/projects to boost egg/broiler production. The Central Poultry Breeding Farms at Bombay, Bhubaneshwar, Hessarghatta and Chandigarh are engaged in scientific poultry breeding programme and have developed high egg production hybrid strains and fast-growing broiler strains. These farms are supplying parent-stock chicks to hatcheries and hybrid commercial ckicks to farmers.

The Central Duck Breeding Farm, Hessarghatta is catering to the requirements of high egg production Khaki Campbell breeding stock ducklings of various states/union territories.

The four random sample test units at Bangalore, Bombay, Bhubaneshwar and Gurgaon continued to conduct egg laying and broiler tests and to provide useful information to poultry farmers, hatcheries and breeding organisations about the performance of various participating layer and broiler stocks in the country (both from public and private sector organisations).

The Central Poultry Training Institute at Hessarghatta is imparting short-term practical courses in different disciplines of poultry to the officials of state governments/union territory administrations, agricultural universities, research institutes and private sector organisations.

The Feed Analytical Laboratories at Hessarghatta, Chandigarh and Bhubaneshwar provide feed analysis facilities to farmers, public and private sector organisations. The fourth laboratory is expected to commence functioning in Bombay during 1989-90. About 1,500 feed samples are annually tested in these laboratories.

The National Agricultural Cooperative Marketing Federation (NAFED) has been entrusted with the marketing of eggs and poultry at national and regional levels.

To popularise poultry farming and to ensure remunerative prices to poultry farmers, the Central government has approved some new schemes *viz.*, (i) Central scheme for establishment of backyard poultry production units for the benefit of rural poor and providing employment opportunities to women in backward, tribal and other remote areas, and (ii) a Centrally-sponsored scheme to provide financial asistance to national and state level poultry corporations/federations and other similar organisations to streamline marketing of eggs and poultry and supply of feed, during the Seventh Plan period.

MEAT PRODUCTION

The country produces around 10 lakh tonnes of meat from various species of livestock. Meat and meat products worth Rs 68.8 crore were exported in 1986-87. The supply of clear and wholesome meat is only possible through the modernisation/improvement of abattoirs. Three modern abattoirs have been established and there is a proposal to establish modern abattoirs in Calcutta, Sikkim, Srinagar, Delhi, Hyderabad and Bangalore.

PIGGERY

There are more than 100 lakh pigs in the country. Pig is one of the most efficient feed converting and fast weight-gaining animal. but indigenous pigs are poor in production performance compared to exotic pigs. In order to improve the economic traits of the indigenous swine herds, cross-breeding and upgrading programmes with the use of exotic pigs have been undertaken. There are 85 pig breeding/multiplication centres which are maintaining exotic cross-breed varieties of pigs. The demand of exotic cross-breed piglets is on the increase. Keeping in view the demand for quality pork and pork products and also to help the primary producers who sell their produce at remunerative prices, regional bacon factories are operating in Andhra Pradesh, Bihar, Punjab, Uttar Pradesh, West Bengal, Kerala, Maharashtra and Rajasthan. There is a proposal to gear up the capacity utilisation of the bacon factories of Bihar, Punjab and West Bengal. Besides these, there are 140 meat processing units operating in the private sector.

SHEEP DEVELOPMENT

Sheep population in the country is 487.6 lakh as per livestock census 1982. The average wool yield of the sheep is less than one kg per head per year. The total wool production in the country during 1988-89 is expected to reach a level of about 422 lakh kg. Out of this only about 40 lakh kg of wool produced is of apparel quality (suitable for clothing) and the remaining quantities of wool are used for the production of quality carpets, general purpose carpets, *namdas*, blankets, etc. The total requirement of the wool in the country is over 780 lakh kg. The gap between the production and requirement is met through the import of wool every year. The total availability of wool for carpet manufacture is estimated at around 200 lakh kg which is sufficient to meet the current requirement of carpet industry.

The principal objective of the sheep development programme is to make the country self-sufficient in wool production *vis-a-vis* meat production through scientific breeding and to raise the status of sheep breeders/wool growers. The strategy for sheep and wool development encompasses both production for meeting the requirement of apparel wool as well as carpet wool for export purposes. Breeding policy envisages selective breeding of important carpet wool breeds and cross-breeding involving suitable exotic breeds with coarse carpet type. India is importing a large number of exotic fine wool breed sheep from USA and Australia in a phased manner. Nearly 24,600 fine wool sheep have been imported from USA/Australia/USSR during last 5-6 years for increasing the production of quality wool for manufacture of apparel and carpets. These measures have shown good results and total raw wool production which was only 275 lakh kg in 1951 is expected to reach a level of about 422 lakh kg during 1988-89.

A Central sheep breeding farm with exotic breeds of sheep has been established at Hisar. At present it is breeding pure exotic breeds as well as cross-breeds for production of superior rams. It has distributed over 7,500 exotic cross-breed rams to different states since its establishment. The farm trains officers and shepherds from different states in modern sheep management. Apart from this a few sheep-breeding farms are also being strengthened for production of more rams. In addition, wool boards/sheep corporations have been established by different state governments to improve the marketing and grading system of wool in the country and to eliminate middlemen.

FEED AND FODDER

For the improvement of our vast livestock resources through proper scientific methods, the availability of nutritious feed and fodder is essential. To make available scientific fodder production technology, seven regional stations have been established in different agro-climatic zones, *i.e.*, at Hisar (Haryana), Kalyani (West Bengal), Gandhinagar (Gujarat), Alamadi (Tamil Nadu), Hyderabad (Andhra Pradesh), Suratgarh (Rajasthan) and Shehama (Jammu and Kashmir). These are also engaged in production and propagation of certified quality fodder seeds. During the year 1988-89, these stations were expected to produce 2,460 quintals of seeds of different fodder varieties. They also conducted 10,250 demonstrations in farmers' fields. Many of the sites are used for demonstration and training of farmers from nearby villages. A Central Fodder Seed Production Farm is in operation at Hessarghatta (Karnataka) since 1980 and another Fodder Seed Farm has recently been started by State Farms Corporation of India (SFCI) at Barpeta (Assam).

A Central project on Fodder Minikit Demonstration is under implementation to popularise high-yielding fodder varieties on large scale. Over 65,000 kits were distributed during 1988-89. The work on search for right type of strains of different leguminous species has been intensified for hardy, drought-resistant pasture legume seeds in re-vegetation of vast culturable and unculturable wastes. Over 150 cultivators of different species of Stylosanthes, Macroptilium and Deshmanthus have been obtained from Australia for testing in India at different sites. Some of the strains are already showing promise. Multiplication of seeds of various species of Stylosanthes, such as S. Scabra, S. Hamata, S. Viscosa, etc., is being continued.

LIVESTOCK HEALTH

More than 17,000 veterinary hospitals and dispensaries and another 20,500 stockman/veterinary aid centres are working all over the country. Routine prophylactic and control measures against common diseases and ailments are being attended to by these institutions. For producing indigenously the veterinary preventive vaccines necessary to undertake disease control operations, 18 vaccine production centres have been established in the public sector in various parts of the country. Together they produce around 80 crore doses of vaccine, antigens, etc., for the prevention of animal diseases. A National Veterinary Biological Products Quality Control Centre is being established by the Union Ministry of Agriculture so as to assure the standards and quality of various indigenously produced veterinary vaccines and diagnostic reagents.

The Ministry of Agriculture is also strengthening the state disease diagnostic laboratories so as to provide speedy diagnosis of obscure and emerging diseases. Fourteen poultry disease diagnosis laboratories have already been strengthened. About 250 disease investigation laboratories are functioning in the state sector.

A national programme for eradicating rinderpest is being implemented throughout the country. As a result, the death toll due to this disease has come down from a level of 196 per lakh per year during the mid 50s to two to three per lakh in the current Plan period. During the current Plan period, efforts are being mounted to get the disease finally eradicated by pursuing policies specific to different risk areas.

DAIRY DEVELOPMENT

Dairy development has assumed a position of paramount importance in the rural economy of India because of its immense potential for supplementing the income of small/marginal farmers and landless agricultural labourers and for augmenting the production of milk and milk products. A majority of farmers in India maintain one or two herds of milch cattle. The policy of the Government has been to promote dairy development on cooperative lines as far as possible. Therefore, emphasis has been placed on milk production in rural areas through a network of cooperatives linked up with processing and marketing of surplus milk in urban areas. Dairy cooperatives are playing an increasingly important role in dairy development by providing various services like provision of technical inputs for milk-production, collection of milk, processing and marketing of milk and milk products. There are at present 250 dairy plants of various sizes and dimensions in the public and cooperative sectors.

OPERATION FLOOD

Although dairying is essentially a state subject, Department of Agriculture and Cooperation has taken up a project called 'Operation Flood' which aims at providing remunerative price to rural milk producers by linking the producing centres with urban consuming areas, thereby helping in the enhancement of milk production and ensuring supply of quality milk to the consumers.

Operation Flood is an integrated programme for dairy development based on the Anand model cooperatives. The main objective of Operation Flood is to build a viable and self-sustaining national dairy industry on cooperative lines. The entire process of development in the areas of milk production, procurement, processing, marketing and production enhancement are to be brought about through organisations owned and managed by farmers themselves. The first phase of the programme, Operation Flood-I (OF-I) initiated in July 1970 continued up to March 1981. OF-II was implemented from April 1981 to March 1985. OF-III is currently in operation.

Up to March 1988, about 50.7 lakh families had been brought under the cooperative ambit through a network of about 49,000 dairy cooperative societies spread over 168 milksheds in the country. During 1987-88, these societies on an average procured about 83 lakh kg of milk per day.

An important achievement of the Operation Flood programme is the emergence of a National Milk Grid which helps offset regional and seasonal imbalances in milk collection and distribution.

Facilities for training of manpower and farmers from various implementing agencies of Operation Flood have been created at the National Dairy Development Board, Anand; Mansingh Institute of Training, Mehsana; Galbabhai Desai Training Institute, Palanpur (Banaskantha) and three regional demonstration and training centres establised at Siliguri in the eastern region, Jalandhar in the northern region and Erode in the southern region. Besides, training in artificial insemination, first-aid, etc., is being given to the staff of dairy cooperative societies at the Union level training centres.

TECHNOLOGY MISSION FOR DAIRY DEVELOPMENT

It has been decided to establish a Technology Mission for Dairy Development with a view to accelerating the pace of increasing rural income and employment through dairy development. Emphasis will be placed on technological interventions to increase overall dairy productivity. The programmes of Operation Flood will be dovetailed with the state governments' programmes on animal husbandry and dairying, poverty alleviation programmes like the IRDP, research programmes, process technology and product manufacture of the Central government research institutions, agricultural universities and the National Dairy Development Board.

FISHERIES

Fisheries play an important role in the economy of India. It helps in augmenting food supply, generating employment, raising nutritional level and in earning foreign exchange. Fisheries Division of the Department of Agriculture has been undertaking directly or through state governments various production-oriented programmes, input supply programmes, infrastructure development programmes besides formulating/initiating appropriate policies to increase production and productivity. The Division has also established a number of institutions for development of fisheries. The main objectives of the fisheries development programme are: (i) enhancing production and productivity of fishermen, fish farmers and fishing industry; (ii) to increase food production and thereby raise the nutritional standard of the population; (iii) to earn foreign exchange from export of marine products; (iv) improving socio-economic conditions of the traditional fishermen; (v) employment generation, and (vi) conservation of depleted species of fish.

The strategies followed by the Division for achieving these objectives are: assisting fishermen, fish farmers and fishing industry by undertaking various fisheries development programmes direct or through state governments and initiating appropriate policy measures for encouraging coastal fishing, deep sea fishing and inland fish farming.

FISH PRODUCTION

The fish production has increased by four times during the last 38 years. The growth of overall fish production of selected years is shown in table 15.5

DEVELOPMENT OF INLAND FISHERIES

In recognition of the important role of the inland fisheries in the overall production of fish, the Government has been implementing two important programmes in the inland sector since the Sixth Plan. These are Fish Farmers Development Agencies (FFDAs) and National Programme of Fisheries Development. A network of 200 FFDAs are functioning now. Under the National Programme for Fishseed Production, 34 Fishseed hatcheries have been commissioned. A new programme was taken up during the year 1986-87, namely, Development of Sewage-Fed Fish Farms.

TABLE 15.5 PRODUCTION OF FISH

(Lakh tonnes)

Year	Marine	Inland	Total
1950-51	5.34	2.18	7 52
1960-61	8.80	2.80	11.60
1970-71	10 86	6 70	17.56
1980-81	15.55	8 87	24.42
1984-85	16 98	11.03	28.01
1985-86	17.16	11.60	28.76
1986-87	17.13	12 29	29 42
1987-88 (P)	16.58	13.01	29.59
1988-89 (E)	17.55	13.80	31.35

P - Provisional E — Estimated.

DEVELOPMENT OF MARINE FISHERIES

Apart from four major fishing harbours, *viz.*, Cochin, Madras, Vishakhapatnam and Roychowk, 16 minor fishing harbours and 82 fish landing centres were constructed to provide landing and berthing facilities to fishing craft and vessels. In the Seventh Plan, it is targetted to build up a fleet of 500 deep sea fishing vessels (20 metres and above) to exploit the vast marine fishery potential of our EEZ. At the end of 1987-88, the number of deep sea fishing vessels was 170. Of these, 145 were acquired on ownership basis by the Indian fishing companies including state fisheries corporations and the remaining 25 on charter basis.

The Government is providing subsidy to poor fishermen for motorising his traditional craft. As the motorised craft can avoid physical exertion in the operation, the fishermen can increase the frequency of operation and area of operation, which will increase their fish catch and income. During the Seventh Plan, it is targetted to motorise 5,000 craft. In 1988-89 a cumulative number of about 2,955 craft is expected to be motorised against the achievement of 1,726 during 1987-88. The subsidy for motorisation is 50 per cent of the cost, which is shared between the Centre and the states.

Craft made of fibre glass and other light materials is supplied to a group of fishermen. The advantage of this kind of craft is that it can be slipped and landed without much effort. For the operation of this kind of craft, it is not necessary to have fish landing centres. During the Seventh Plan, it is proposed to introduce 202 Beach Landing Craft (BLC). Subsidy for this scheme is 50 per cent. Up to the end of 1987-88, sanction has been issued for 147 craft to various states.

BRACKISH WATER AQUACULTURE

The objective of the scheme is to utilise country's vast brackish water area for fish/prawn culture. So far, 26 projects have been sanctioned A pilot project for construction of five prawn hatcheries is being taken up during the Seventh Plan. During 1988-89, one prawn seed hatchery and nine others have been sanctioned in Kerala, Andhra Pradesh, Orissa, West Bengal, Maharashtra, Gujarat and Karnataka. Four Brackish Water Fish Farmers' Development agencies are functioning in the country.

WELFARE PROGRAMMES FOR TRADITIONAL FISHERMEN

There are two important programmes for the welfare of traditional fishermen, namely: (i) group accident insurance scheme for active fishermen, and (ii) national welfare fund for fishermen. Under the former scheme, a fisherman is insured for Rs 15,000 in case of death or permanent disability and Rs 7,500 in case of partial disability. The annual premium is only nine rupees which is shared between the Centre and the states. The number of fishermen expected to be insured in the year 1988-89 is 6.50 lakh. Under the latter scheme, civic amenities like housing, drinking water, recreation facilities, credit facilities, etc., are proposed to be provided in 62 selected fishermen villages during the Seventh Plan; sanction has been issued till the end of 1988-89 to a cumulative number of 47 villages as against 27 villages in the previous year.

SPECIALISED INSTITUTES

During 1988-89, Ministry of Food Processing Industries was created and the work related to fishing and fishery in the extra territorial waters including deep sea fishery was transferred to it from the Department of Agriculture and Cooperation. Two Central schemes, *viz.*, Trawler Development Fund and Fisheries Survey of India which were earlier dealt with by this Department are now being dealt with by the new Ministry.

The Central Institute of Fisheries Nautical and Engineering Training (CIFNET), Cochin aims to make available sufficient number of operators of fishing vessels and of technicians for shore establishments. In addition to the main campus at Cochin, the Institute has a unit each at Madras and Vishakhapatnam. The Institute has an intake capacity of about 500 trainees in a year.

The Integrated Fisheries Project, Cochin envisages processing, popularisation and marketing of the unconventional varieties of fish.

The Central Institute of Coastal Engineering for Fisheries, Bangalore is engaged in techno-economic feasibility study for location of fishing harbour sites and brackish water fish farms.

AGRICULTURAL CENSUS

The first agricultural census was carried out with 1970-71 as the reference year. Since then, two more census have been conducted with 1976-77 and 1980-81 as the reference periods respectively. The fourth agricultural census with 1985-86 as the reference year is in progress. The scope of the second and subsequent census was enlarged by including an input survey under which the data on consumption/application of various inputs such as fertilisers, manures, pesticides and livestock, agricultural machinery and implements, etc., were also collected through sample surveys by adopting a two stage sampling design. For the first time in the third agricultural census, with agricultural year 1980-81 as the reference period, the data on holdings of scheduled castes and scheduled tribes was collected separately. The all-India report on agricultural census 1980-81 has already been printed and released for sale.

The total number of operational holdings in the country increased from 8.16 crore in 1976-77 to 8.89 crore in 1980-81. The marginal and small holdings with operated area less than two hectares accounted for about three-fourth of the total holdings in 1980-81.

The number of holdings pertaining to scheduled castes and scheduled tribes in the country was estimated at one crore (11.3 per cent) and 69 lakh (7.7 per cent) respectively.

The total area operated in the country was 16.38 crore hectares, of which 1.15 crore hectares (7 per cent) and 1.67 crore hectares (10.2 per cent) was accounted by scheduled castes and scheduled tribes holdings respectively.

The data for input survey 1981-82, has now been received from all the states except Rajasthan. This has been transferred to the tapes for processing and generation of output tables.

The entire field work in respect of the fourth agricultural census with 1985-86 as the reference year has been completed in 27 states/ UTs. The priority table-1 on number and area of operational holdings by size-classes has been received from states/ UTs. Assam, Meghalaya, Kerala and Sikkim are the only states from which Table-1 is still awaited. The Bulletins showing distribution of operational holdings and area operated by size-classes, as per agricultural census 1985-86 have been released for 18 states. As part of the agricultural census, an input survey is also being carried out with agricultural year 1986-87 as the reference year. The fieldwork for input survey for 1986-87 has been completed in all states/ UTs except Assam, Bihar and Uttar Pradesh. The work in these states has been delayed due to severe drought/floods of 1987 which had led to diversion of primary staff for relief operations.

AGRICULTURAL RESEARCH AND EDUCATION

Department of Agricultural Research and Education, set up in 1973, in the Ministry of Agriculture, is responsible for coordinating research and educational activities in the fields of agriculture, animal husbandry and fisheries. Besides, it helps to bring about inter-departmental and inter-institutional collaboration with national and international agencies engaged in the same and allied fields. The Department provides Government support, service and linkage to the Indian Council of Agricultural Research (ICAR).

INDIAN COUNCIL OF AGRICULTURAL RESEARCH

ICAR, set up in July 1929 as a registered society, is the apex body for planning, conducting and coordinating research in the field of agriculture, animal husbandry and fisheries and effect their application at field level through the medium of different extension agencies under the Central and state governments. During the last 42 years, the country has developed one of the largest national agricultural research systems in the world. In order to perform its functions in an integrated manner, the ICAR has created a national grid of cooperative research in which Central institutes, state agricultural universities and other educational and scientific institutions participate as equal partners. At the centre is the ICAR headquarters headed by Director-General with major administrative units under the control of Secretary, ICAR and eight subject-matter divisions of Crop Sciences, Animal Sciences, Soils and Agronomy, Horticulture, Fisheries, Education, Agricultural Extension and Agricultural Engineering working under the guidance and control of respective Deputy Directors General. The overall research set-up comprises ICAR's 45 research institutes with 167 research stations spread all over the country, nine Project Directorates, 19 National Research Centres, 69 multi-disciplinary, multi-locational, all-India Coordinated Research Projects with 1,168 research centres, 26 agricultural universities and 128 multi-disciplinary stations in 116 agro-climatic zones established under the National Agricultural Research Project (NARP) to enhance the regional research capabilities of the state agricultural universities. All the major states have one agricultural university (with the exception of Maharashtra, which has four, Uttar Pradesh three, Himachal Pradesh, Karnataka and Bihar two each). These universities act at the state level, performing the triple functions of research, education and extension. Indian Agricultural Research Institute (IARI), New Delhi, Indian Veterinary Research Institute (IVRI), Izatnagar and Central Institute of Fisheries Education, Bombay have the status of a deemed university. They impart post-graduate education and also confer degrees. The Council supports 530 ad-hoc research schemes for the benefit of research workers in agriculture and allied fields including biotechnology, in all parts of the country.

In addition to the large network of agricultural research and education institutes, the ICAR has also started a large network of transfer of technology institutions. These comprise national demonstration centres in 48 districts all over the country to demonstrate new crop varieties and production technologies; 38 operational research projects with 103 centres to test the specific production technologies on area/watershed basis and to identify constraints in adoption of such technologies; 90 *krishi vigyan kendras* to train farmers in totality of agriculture production technologies; eight trainers training centres; 115 lab-to-land centres, and 45 centres for upliftment of scheduled castes and scheduled tribes.

Considering the richness and diversity of genetic resources of crops, livestock and fish and to ensure their continued availability to support agricultural production as well as to look into the problems of soil conservation and use, the Council has established four National Bureaux of Plant, Animal and Fish Genetic Resources and of Soil Conservation and Land Use Planning. The

National Bureau of Plant Genetic Resources has established a National Facility for long term preservation of seeds as well as tissue culture repository for long-term storage of vegetatively propagated materials for the entire Asian region for germplasm and data bank. It is recognised that while improving agricultural production, the ecological consequences also deserve attention. The need for conservation of soil, water, flora and fauna which are basic to sustained agricultural production, is fully emphasised. With the modernisation in management procedures, the managers of scientific research need similar exposure and training like the industrial managers. For the purpose of providing such training, the Council has established a National Academy of Agricultural Research Management at Hyderabad.

CROP SCIENCES

The researches carried out under the aegis of the ICAR research system, since the independence of the country, have led to the famed green revolution, giving the country a status of self-sufficiency in food production. The foodgrains production is now close to 1,500 lakh tonnes per year as compared to about 510 lakh tonnes in 1950-51. The production has particularly increased in wheat and rice, being 470 lakh tonnes and 640 lakh tonnes now as compared to 64 and 235 lakh tonnes, respectively, in 1949-50. About 250 varieties of rice suited for irrigated conditions, lowland conditions as well as for upland ecologies and possessing high degree of resistance to major important diseases and pests, have been released. A special programme has been launched to boost rice production in the eastern states of the country to realise production consistent with the potentials. In wheat, 122 varieties with high yield and disease resistance, have been released; the fertilisers need and the allied agro-techniques for different wheat growing zones have been developed.

For coarse grains, such as maize, sorghum, pearl millet and minor millets, development of hybrids, synthetics and associated cultural practices has been a success. In pulses high-yielding varieties for chickpea and short duration varieties of mungbean, pigeonpea and *urdbean* have been developed. Cultivation of *rabi* pigeonpea in Bihar, rabi mungbean/urdbean in rice fallows of Andhra Pradesh, Orissa, Karnataka and Tamil Nadu and phaseolus bean in plains of India has been made possible. Steps have been taken to increase oilseed production by setting up a Technology Mission in 1986. High-yielding varieties and production technologies for different oilseed crops have been developed; the possibilities of moving crops like rapeseed, soyabean, etc., to non-traditional areas and to non-traditional seasons are being exploited. India is the first country in the world to have commercialised the cultivation of hybrid cotton varieties, giving annual production of about 27 lakh bales. Similar success has been achieved in development of sugarcane varieties which are under cultivation in more than 25 countries of the world. In jute and allied fibres also, high-yielding varieties and product development technologies have been evolved. High quality varieties of smoking tobacco with high yield and excellent aroma and flavour have been evolved. Production of quality seed is a vital link in the spread of new varieties. To assist the National Seeds Corporation in producing high quality seeds of new varieties on a target-oriented basis, the Council has taken up a National Seeds Project.

HORTICULTURE

The scientific cultivation of horticultural crops and plantation crops on the basis of research findings has helped to increase the average productivity of fruits by about 64 per cent during the last 30 years. Thirty seven improved varieties of major vegetable crops including some F_1 hybrid varieties and 25 varieties of potato have been developed with characteristics of high yield and resistance to major pests and diseases. The area under potato has increased by nearly 75 per cent and the productivity by 25 per cent during this period. Significant achievement has been made in development of regular bearing hybrids of mango, high-yielding varieties grape, papaya, pomegranates, *ber* and lime. In plantation crops, five improved coconut hybrids, with tolerance to moisture stress, have been developed and released. Multistorey, high density and mixed farming systems have been developed with horticultural and plantation crops leading to improved productivity and increasing returns. Oilpalm hybrids with yield potential of up to 4.5 tonnes oil per hectare are now available. More recently, tissue culture technology for rapid multiplication of coconut, oilpalm, datepalm, papaya and orchids, has been standardised. Seed production of vegetable crops has been given special priority. Fruits and vegetable preservation and storage have been emphasised under the Post-Harvest Technology Programme. Simple designs have been developed for cold storage of potato and other perishable commodities; and simple machines like cardomom drier, coconut dehusker, cassava chip-making machine, have been popularised.

SOIL AND AGRONOMY

Soil resources are being systematically surveyed; soil maps and soil survey manuals are being developed; district level soil inventory, soil correlation, training and education data are being compiled. To increase capabilities of arid lands and to support human and livestock population, techniques have been developed for efficient water conservation, sand dune stabilisation and desert afforestation. Increasing and stabilising production from dryland areas, continues as a major objective. Water balance analysis in drylands has enabled the identification of suitable growing seasons for different crops and varieties for inter-cropping and double-cropping. Integrated development models based on watersheds have been successfully demonstrated.

For amelioration of saline and alkali soils, chemical amendments, techniques for judicious use of irrigation water and adoption of other management practices like sub-surface drainage systems, agro-forestry programmes and conjunctive use of saline groundwater and good quality fresh/canal water are advocated.

ANIMAL SCIENCES

The significant impact of the researches in the field of Animal Sciences has enabled, during the last 35 years, to increase milk production to 170 lakh tonnes per year, production of eggs from 290 crore to 1,700 crore, that of birds to 40 lakh. The wool production has touched 450 lakh kilograms annually.

In cattle, inter-breeding and selection of half-breds of Holstein, Tharparker and of Brown Swiss, Sahiwal and Red Sindhi respectively, has led to development of elite strains, yielding 3,200 to 3,500 litres of milk per lactation. The superior germplasm in the form of frozen semen, bulls and bull calves are made available on a large scale.

In buffaloes selection, gains have been realised for reducing seasonality of calving and calf mortality. Buffalo semen freezing technologies have been developed sucessfully. In sheep new strains like *Avikalin* for superior carpet wool and *Avivastra* for superior apparel wool, and new synthetics for fine wool and mutton have been developed through cross-breeding of indigenous and exotic breeds with superior feed convertion efficiency. Similar success has been achieved with goats and rabbits. Research in poultry including quails for eggs and meat, has yielded superior strains. For identifying non-conventional feed resource methodologies for improving the utilisation of crop residues such as wheat straw, paddy straw, sugarcane bagasse through chemical and microbial treatment have been developed.

In animal health a number of new diagnostic methods and a number of highly potent vaccines such as against sheep pox, canine distemper, canine rabies, three candidate vaccines based on leucocytic culture of schizont against theileriosis are under test. The newly established biotechnology centre on animal health has taken up DNA recombinant technology for diagnostic reagents and vaccines.

Research in dairy technology has led to development of continuous *khoya* and *ghee* making machines, new products from buffalo-meat, laying down of standards, etc.

FISHERIES

Fishery research has led to the development of procedures for determining marine fisheries resources, development of craft and gear design and microbiological standards for fish and fish products. Technologies have been developed for open sea-ranching involving mussels, culture of pearl oyster, edible oyster, sea weed and prawns, and fresh water aquaculture incorporating six carp species giving up to 11 tonnes per hectare production. The fisheries institutes in the Council have played an important role in human resource development, training at Master's and PhD level.

RESEARCH IN FRONTIER AREAS

ICAR has established three national centres on biotechnology agriculture, animal health and animal production at the three national institutes; it will involve biological nitrogen fixation, plant cell and tissue culture, molecular biology and biochemistry of crop plants, especially oilseed; utilising DNA recombinant technology, developing monoclonal antibodies and hybridomes for cheaper and more effective immuno-diagnostic and immuno-prophylactic agents; and multiple ovulation, embryo transfer technology, genetic manipulation and cryo-preservation.

AGRICULTURAL EDUCATION

The major growth of agricultural education started with the establishment of state agricultural universities in 1960's. At present there are 26 agricultural universities with 92 agricultural colleges, 25 veterinary colleges, nine dairy science colleges, 13 home science colleges, 12 agricultural engineering colleges and five fisheries colleges. The ICAR is performing the role of UGC with respect to agricultural education; it has a Scientific Panel and a Norms and Accreditation Committee to make recommendations and to advise the Council on standards of education, curricula, admission requirement and the financial assistance.

The current admission capacity in agriculture is 8,000 under-graduates and 3,000 post-graduates excluding the capacity in the private agricultural colleges, non-constituents of the agricultural universities. In veterinary, agricultural engineering, home science, dairy science, fisheries and horticulture, the admission capacity at under-graduate level is 1,800, 510, 900, 175, 160 and 130 respectively. A massive programme is under way to train teachers in forestry, for which faculties are being established in a number of agricultural universities.

TRANSFER OF TECHNOLOGY

The first transfer of technology programme was the National Demonstration Project initiated in 1965. New programmes like Operational Research Projects, Krishi Vigyan Kendras, Teachers' Training Centres and Lab-to-Land Programmes have been since started. These transfers of technology programmes have played a very important role in demonstration of new varieties and production technology on watershed/whole village basis and on individual farm family basis and have allowed the scientists to identify the constraints in the transfer of technology so that they can reorient their research programmes to the needs of the farmers.

AGRICULTURAL RESEARCH INFORMATION SERVICE

One of the major objectives of the ICAR is to act as clearing house of knowledge in agriculture and allied areas. To fulfil this object it is publishing scientific journals in agriculture, animal husbandry and fisheries and brings out popular literature in English and Hindi.

COOPERATION

The cooperative idea took a concrete shape in India for the first time in 1904, when the Cooperative Credit Societies Act—a measure designed to combat rural indebtedness and to provide for registration of credit societies—was passed. Later, in 1912, the Cooperative Societies Act also provided for registration of non-credit societies as well as federations of cooperatives. Since then, the cooperative movement has made noticeable progress, specially in the field of agricultural credit, marketing and processing of agricultural produce, supply of farm inputs and distribution of consumer goods. The idea of the growth of the cooperative movement in India can be had from the fact that there are as many as 3.50 lakh cooperative societies of all types in the country with total membership of about 15 crore and a total working capital of about Rs 48,000 crore as on 30 June 1988. The other distinguishing feature of the cooperative scene in India, is that it is largely village-based. Government's emphasis on institutionalisation of distribution of inputs to farmers and marketing of their agricultural produce through cooperatives owned by them, has helped a great deal in strengthening the cooperative sector in rural areas. The overall strategy in this regard is to promote agricultural production through provision of inputs for increasing agricultural production and post-harvest facilities to protect the interests of farmers.

GROWTH OF COOPERATIVES

The salient features and operational dimensions of the cooperative movement in India for selected years between 1960-61 and 1986-87 and also as on 30 June 1988 are given in table 15.6.

TABLE 15.6 GROWTH OF COOPERATIVES

	1960-61	1970-71	1980-81	1984-85	1985-86	1986-87	1987-88
Number of Societies (lakh)	3.32	3.20	3.26	3.15	3.21	3.42	3.50
Membership (lakh)	352	644	1,176	1,410	1,420	1,465	1,500
Share Capital (Rs crore)	222	851	2,088	3,535	3,998	4,425	--
Working Capital (Rs crore)	1,312	6,810	25,119	37,769	41,548	47,550	48,000

PRIMARY AGRICULTURAL CREDIT SOCIETIES

At the end of June 1987, there were 91,927 primary agricultural credit societies operating in the rural areas of the country. The membership of these societies was 7.44 crore. Universal membership has now been accepted as the policy, so far as the primary agricultural societies are concerned, so that the people belonging to the weaker sections could become members of the cooperatives and avail of their services. The agricultural credit societies had a share capital of about Rs 886.09 crore at the end of June 1987. The total loans advanced by these societies amounted to Rs 4,400 crore during 1987-88.

The cooperative marketing structure comprises 5,923 primary marketing societies (2,633 general purpose societies at the *mandi* level, 3,290 special commodities societies for oilseeds, etc.) and 157 district/central societies covering nearly all the important mandis in the country, two general purpose state cooperative marketing federations at the state level and 16 special commodity marketing federations and the National Agricultural Cooperative Marketing Federation (NAFED) which acts as a nodal marketing agency in the cooperative sector at the national level. The total value of agricultural produce marketed by cooperatives amounted to about Rs 3.902 crore in 1987-88, as against Rs 175 crore in 1961-62. The total value of foodgrains handled by marketing cooperatives increased from about Rs 500 crore in 1979-80 to about Rs 1,128 crore in 1986-87. During 1986-87 NAFED achieved a business turnover of Rs 156.94 crore, as against Rs 30.53 crore in 1976-77.

The structure of processing units established in the cooperative sector conforms to two distinct patterns, namely, (a) units established by independent processing societies and (b) units established as adjuncts to cooperative marketing societies. Under the first category fall the larger units, such as, cooperative sugar factories, spinning mills and solvent extraction plants. Medium and small units, such as rice mills, oil mills, cotton ginning and pressing units, jute baling units, mostly fall under the second category. There were 2,402 agro-processing units as on 31 March 1988 in the cooperative sector. During 1987-88 sugar season (October 1987 to September 1988), 211 cooperative sugar factories were in production. By March 1989, another four units may be installed. They produced 52.6 lakh tonnes of sugar accounting for about 57.5 per cent of the country's total production of 91.5 lakh tonnes. At the national level, the National Federation of Cooperative Sugar Factories renders advice to the member cooperatives on technical improvement, financial management, raw material development and inventory control.

STORAGE

The National Cooperative Development Corporation (NCDC) is responsible for planning, promoting and financing the programme of augmenting storage capacity of cooperatives at various levels. Storage capacity of 94.25 lakh tonnes had already been constructed in the cooperative sector by the end of June 1987 as against a capacity of 7.5 lakh tonnes in 1961-62. This achievement had been possible owing to the implementation of four large storage projects in 12 states during the last eight years with financial assistance obtained from the World Bank and the European Economic Community. At present, cooperatives own 45,280 rural and 7,246 marketing godowns in the country.

At the end of 1986-87, there were 244 cooperative cold storages in the country with a capacity of 6.74 lakh tonnes, of which 204 cold storages with a capacity of 5.38 lakh tonnes have already been installed and commissioned. A World Bank assisted project, NCDC-II was implemented for creating storage capacity of three lakh tonnes in five major potato growing states of Uttar Pradesh, West Bengal, Bihar, Haryana and Madhya Pradesh. Under the project, out of 85 cold storages to be established, 57 have already been installed and the remaining are under construction.

INDUSTRIAL COOPERATIVES

Cooperatives occupy an important place in the field of village and small industries and handloom weaving. As on 30th June 1987, there were 54,112 industrial cooperatives with a membership of 36.69 lakh. The business turnover of these societies was Rs 1,120.84 crore during 1986-87. The National Federation of Industrial Cooperatives was set up in 1966 with a view to assisting the marketing of products of member societies.

COOPERATIVE SPINNING MILLS

The total number of cooperative spinning mills installed was 101 (44 in the growers' sector and 57 in the weavers' sector) with a capacity of about 26.83 lakh spindles which was about 20 per cent of the total spindlage in the country as on March 1988. The cooperative spinning mills have been organised in 1964 at the national level and it is called the All India Federation of Cooperative Spinning Mills which is a promotional and developmental organisation.

SUPPLY OF AGRICULTURAL INPUTS

Cooperatives also play a significant role in the production and distribution of agricultural inputs. During 1987-88 nearly 30 lakh tonnes of fertilisers were distributed through a network of 67,000 cooperative retail outlets representing over 33 per cent of the total fertilisers distributed in the country. The cooperatives have also diversified their activities in recent years to cover new lines of business.

FUNCTIONAL COOPERATIVES

Functional cooperatives for programmes like dairy, fishery and poultry mainly relate to the service of weaker sections. Such cooperatives provide increased employment and income opportunities to different sections of the community like small and marginal farmers and fishermen. NCDC gives financial assistance to various types of cooperatives.

DAIRY COOPERATIVES

The main thrust of dairy development is on the organisation of three-tier milk producers' cooperatives on the Anand pattern. The contribution of cooperatives in the implementation of 'Operation Flood' is substantial. On 30 June 1986, there were 54,603 primary milk supply cooperatives with a membership of 64.36 lakh. During 1985-86, the cooperatives handled milk and milk products valued at Rs 885 crore. The primary milk cooperatives are generally federated into milk unions at district and state levels. There were 234 such unions at the end of 1985-86. A National Federation of Dairy Cooperatives was set up in 1970 with its headquarters at Anand.

FISHERY COOPERATIVES

The organisational structure of fishery cooperatives normally consists of primary fishery cooperatives at the base level. A super-structure of federation of primary fishery cooperatives has been builtup. It consists of district and central federations and state level organisations. An All India Fishermen Cooperative Federation was set up in 1980. On 30 June 1986, there were 7,754 primary fishermen's cooperatives with a membership of 6.74 lakh and the business turnover of these societies amounted to Rs 50.22 crore during 1985-86.

POULTRY COOPERATIVES

By the end of June 1987, there were over 1,675 primary poultry cooperatives with a membership of 0.93 lakh. The business turnover of these societies was Rs 7.21 crore during 1986-87.

MULTI-PURPOSE TRIBAL COOPERATIVES

As part of the programme of economic development of tribals, cooperatives in tribal areas were reorganised to enable them to function as multi-purpose societies known as Large-sized Multi-purpose Societies (LAMPS). State level cooperative tribal development corporations/federations have been established in Andhra Pradesh, Bihar, Madhya Pradesh, Maharashtra, Rajasthan, West Bengal and Orissa to serve as apex organisations for marketing of minor forest produce and consumer goods.

LABOUR CONTRACT AND CONSTRUCTION SOCIETIES

Labour contract and construction cooperatives have been organised with a view to providing employment at reasonable wages to their members and preventing their exploitation by the contractors. As on 30 June 1987, there were 18,323 labour cooperatives and forest labour cooperatives with a membership of 11.68 lakh. The value of works executed by these societies during 1986-87 was Rs 350.10 crore.

NON-AGRICULTURAL CREDIT SOCIETIES

There were 25,426 primary non-agricultural credit societies, including employees' credit societies and urban banks, with a membership of 137.83 lakh at the end of June, 1987. They raised Rs 453.71 crore as share capital, Rs 772.24 crore as deposits and Rs 1,994 crore as working capital. Their total lendings during 1986-87 were of the order of Rs 1,217 crore.

MULTI-STATE COOPERATIVE SOCIETIES

Cooperative societies is a state subject under the Constitution of India. However, such cooperative societies, as have their objects not confined to one state and serving the interests of members in more than one state, come under the legislative and executive jurisdiction of the Central government. The Multi-State Cooperative Societies Act, 1984 came into operation from 16 September 1985. Earlier, these multi-state cooperative societies were governed by the Cooperative Societies Act of the state, where its principal place of business was located.

At present, there are 80 multi-state cooperative societies in the country. These include 20 national cooperative societies such as Indian Farmers Fertiliser Cooperative Ltd., Krishak Bharati Cooperative Ltd., National Agricultural Cooperative Marketing Federation of India, National Cooperative Consumers' Federation, etc.

NATIONAL LEVEL COOPERATIVE FEDERATIONS

A major development after independence has been the emergence of national cooperative federations which have added a new dimension to the cooperative infrastructure. With the National Cooperative Union of India at the apex, the other national level cooperative federations established in the country are: National Agricultural Cooperative Marketing Federation, National Federation of State Cooperative Banks, National Federation of Cooperative Sugar Factories, National Cooperative Agriculture and Rural Development Banks' Federation, National Cooperative Consumers' Federation, National Federation of Industrial Cooperatives, All India Federation of Cooperative Spinning Mills, National Cooperative Housing Federation, National Cooperative Dairy Federation, National Federation of Urban Cooperative Banks and Credit Societies, National Federation of Fishermen's Cooperatives, National Federation of Labour Cooperatives and National Cooperative Tobacco Growers' Federation.

COOPERATIVE TRAINING AND EDUCATION

A three-tier well-organised structure of cooperative training is available in India. It consists of a national institute of cooperative management known as Vaikunth Mehta National Institute of Cooperative Management (VMNICM), Pune for catering to the training requirements of senior/key level cooperative personnel, a network of 18 cooperative training colleges for training of intermediate level personnel of cooperatives and state cooperation departments and 92 cooperative training centres for training of junior level personnel. The VMNICM and 18 cooperative training colleges situated at state headquarters are functioning under the administrative and financial control of the National Council for Cooperative Training of the National Cooperative Union of India, which is financed entirely by the Government of India. Cooperative centres for training of junior level personnel are functioning under the control of state cooperative unions and state governments.

16 Water Resources

THE input of water is vital for realising the full pontential of agriculture sector and its contribution to the country's development. The optimum development and efficient utilisation of our water resources, therefore, assumes great significance.

The Ministry of Water Resources is responsible for broadly laying down the policies and programmes for the development and regulation of the country's water resources both surface and groundwater. Projects for the development of water resources and flood control are planned, funded and implemented by the states. The role of the Ministry is essentially policy formulation, over-all planning, development and management of water as national resources and monitoring of the countrywide irrigation development. This covers sectoral planning, coordination, policy guidance, technical examination and assistance in respect of irrigation projects, facilitation of external assistance and assistance in the resolution of inter-state disputes and implementation of inter-state projects. The Indus Waters Treaty and the Farakka Barrage Project are also within the administrative purview of the Ministry. It also assists the Planning Commission in the formulation, monitoring and review of the Annual Plans and Five Year Plans of the states in the irrigation (including flood control) sector. The Central Water Commission functions as the principal technical arm of the Ministry.

As a first step in this direction, the National Water Resources Council, under the chairmanship of the Prime Minister, adopted the National Water Policy on 9 September 1987. Recognising water as a precious national asset, the policy embodies the nation's resolve that planning and development of water resources would be governed by national perspectives. The policy recognises drainage basin as the basic unit of planning for water resources development and calls for appropriate measures to optimise utilisation of these resources not only for the benefit of the people living in the basin, but also for transfer of surplus water to meet the requirements of water-short areas.

IRRIGATION POTENTIAL

Sustained and systematic programme for development of irrigation facilities in the country was taken up with the advent of planned development in 1951. The irrigation potential created during the pre-Plan period was 226 lakh hectares, of which 97 lakh hectares were from major and medium irrigation projects and 129 lakh hectares from minor irrigation schemes. The cumulative irrigation potential increased to about 675 lakh hectares by the end of 1984-85. Of this, 300 lakh hectares were from major and medium irrigation projects and 375 lakh hectares from minor irrigation schemes. The irrigation potential (achievement) in regard to major and medium irrigation projects was 5.1 lakh hectares in 1985-86 and 4.6 lakh hectares in 1986-87. Minor irrigation potential, which includes surface water and groundwater, was 15.2 lakh hectares during 1985-86 and 16.3 lakh hectares during 1986-87.

TABLE 16.1 IRRIGATION POTENTIAL

(Lakh hectares)

	Ultimate (By 2010 AD)	Created up to VI Plan 1984-85	VII Plan 1985-90 (target)	1985-86 Achievement	1986-87 Achievement	1987-88 Anticipated Achievement	1988-89 (target)
Major and Medium	580	300	43	5.1	4.6	6.8	9.7
Minor Irrigation							
(a) Surface water	150	97	15	2.9	2.8	3.0	3.8
(b) Groundwater	400	278	71	12.3	13.5	13.2	25
	1,130	675	129	20.3	20.9	23	38.5

The target for major and medium irrigation projects is 9.7 lakh hectares for 1988-89. For minor irrigation schemes, it is 28.8 lakh hectares. The target of additional potential during the Seventh Plan is 129 lakh hectares, of which 43 lakh hectares is from major and medium irrigation projects and 86 lakh hectares from minor irrigation schemes. The approved outlay for the Seventh Plan is about Rs 14,360 crore for major, medium and minor irrigation programmes and about Rs 1,671 crore for the Command Area Development Programme.

The main thrust of the development policy for irrigation sector is towards achieving the assessed target of 1,130 lakh hectares of gross irrigation potential in the country based on coventional methods of diversion and storage by 2010 AD or so. Of this, about 585 lakh hectares are expected to be irrigated eventually from major and medium projects and the balance by minor schemes.

Table 16.1 shows irrigation potential for different periods, anticipated achievement and also targets.

MAJOR AND MEDIUM IRRIGATION

Irrigation projects with a Culturable Command Area (CCA) of more than 10,000 hectares are classified as major projects and projects with a CCA of more than 2,000 hectares and up to 10,000 hectares are categorised as medium projects.

Between 1951 and 1985, 246 major and 1,059 medium projects were taken up for execution. Among them, 65 major and 626 medium projects were completed by 1985. During the Seventh Plan, 18 new major and 66 new medium projects are being taken up. Out of the 199 major and 499 medium projects in hand, 58 major and 303 medium projects are expected to be completed during the Seventh Plan period.

The major irrigation projects taken up and completed during various Plan periods are shown in table 16.2.

TABLE 16.2 MAJOR IRRIGATION PROJECTS TAKEN UP AND COMPLETED

Plan	Projects taken up	Projects completed
First Plan (1951-56)	24	1
Second Plan (1956-61)	23	4
Third Plan (1961-66)	27	9
Annual Plans (1966-69)	11	1
Fourth Plan (1969-74)	33	9
Fifth Plan (1974-78)	73	4
Annual Plans (1978-80)	14	1
Sixth Plan (1980-85)	41	36
Total projects by the end of Sixth Plan	246	65

MINOR IRRIGATION

The minor irrigation programme includes groundwater development through construction of dugwells, private shallow tubewells, deep public tubewells, boring and deepening of dugwells and small surface water development works through diversion schemes, storage schemes and lift irrigation projects, each having a culturable command area of not more than 2,000 hectares.

Groundwater development, which constitutes bulk of the minor irrigation programme, is essentially a people's programme implemented primarily through individual and cooperative efforts with finance obtained mainly from institutional sources. To encourage water saving devices such as sprinklers, drip system, hydrants, water turbines and hand pumps, Government subsidies are made available to small and marginal farmers for their purchase.

Minor irrigation schemes provide instant and reliable source of irrigation to the cultivators. It also provides critical help in improving the status of irrigation and in controlling water-logging and salinisation in the canal command. Minor irrigation surface water projects, which are financed through Plan funds, often provide the means of irrigation in several undulating tracts comprising bulk of chronically drought-affected areas. Initial investment on these schemes is comparatively low and they can be completed quickly. Moreover, these schemes are labour intensive and offer employment to the rural people. The growth of irrigation potential from minor irrigation schemes is shown in table 16.3.

TABLE 16.3 MINOR IRRIGATION POTENTIAL
(Cumulative)

(Lakh hectares)

Period	Potential
Ultimate potential (By 2010 AD)	550.00
Potential at the end of 1950-51	129.00
First Plan	140.00
Second Plan	147.00
Third Plan	170.00
Annual Plan (1968-69)	190.00
End of Fourth Plan	235.00
End of Fifth Plan	273.00
End of Annual Plan (1979-80)	300.00
End of Sixth Plan	375.00
End of 1985-86	390.44
End of 1986-87	406.70
End of 1987-88	422.92
End of 1988-89 (Anticipated)	451.5

COMMAND AREA DEVELOPMENT PROGRAMME

The Centrally-sponsored command area development programme (CDA) was launched at the beginning of the Fifth Plan with the specific objective of ensuring a faster and better utilisation of irrigation potential in selected major and medium irrigation projects in the country. The programme broadly covers farm development works which include construction of field channels and field drains, land shaping wherever necessary, farm roads, consolidation of holdings and realignment of boundaries, introduction of *warabandi* or the rotational supply of water and setting up of WHF wireless network for better communication in order to ensure equitable and assured supply of irrigation water to each and every farm holding, arrangements for supply of inputs and credit, agricultural extension, construction of markets and godowns and the development of groundwater for conjunctive use. The programme covering 131 selected major and medium irrigation projects in 20 states and two union territories with the total culturable command area of over 180 lakh hectares, is being executed through 50 command area development authorities.

During the Seventh Plan, more emphasis is being laid on improving water management and water delivery system, adaptive trials, training of field-level staff and farmers, monitoring and evaluation of the programme at projects as well as state level and involvement of farmers in water management.

The financing of the CAD programme is from three sources, namely, Central assistance to the states on a matching basis for certain selected items, the state government's own resources and institutional credit for on-farm development, marketing and storage.

From 1986-87, a new financing pattern has been introduced, according to which the construction of field drains/field channels from outlets up to 5-8 hectare blocks will be financed by a matching grant—50 per cent to be borne by the Centre and 50 per cent by the states. In the Seventh Plan, allocation for CAD programme is Rs 500 crore in the Central sector.

It has been decided to include on pilot basis, suitable minor irrigation projects in states/union territories of the north-eastern region, including Sikkim, Jammu and Kashmir and Himachal Pradesh for command area development.

The ultimate objective of the CAD programme is to maximise agricultural production in the command area. Every CAD administrator has been asked to undertake intensive crop-cutting experiments for each crop session so that the rise in the agricultural productivity in irrigated commands can be effectively monitored. The Central government has also decided to provide cent per cent cost of training for orientation of senior level officers involved in the programme.

Up to the end of the Sixth Plan period, field channels were constructed in an area of 81 lakh hectares and *warabandi* was implemented in an area of 16 lakh hectares.

FLOOD MANAGEMENT

Floods cause immense damage to human life and property almost every year.

Of the country's total area, about 1/8th has been announced as flood-prone. The National Flood Control Programme launched in 1954 was divided into three phases—immediate, short-term and long-term. The immediate phase was devoted to intensive collection of data and execution of emergent flood protection measures. The short-term programme which was roughly to coincide with the Second Plan, envisaged the construction of embankments, protection of some towns, raising of villages, etc. The long-term phase envisaged the construction of storage reservoirs, stabilising the benefits of the works already carried out and taking up additional works of embankments.

ACHIEVEMENTS

Since the launching of the national programme, an expenditure of about Rs 1,763 crore was incurred on flood control sector, till the end of Sixth Plan. In the Seventh Plan, an outlay of Rs 947.39 crore has been approved (Rs 797.46 crore by states and union territories and Rs 149.93 crore by the Centre). Since 1954, nearly 14,511 km of new embankments, 28,038 km of drainage channels, 459 town protection works and raising the level of about 4,701 villages, had been completed up to March 1987. In addition, anti-sea erosion measures to protect the coastline, especially in Kerala, were taken up. Of the 320 km of vulnerable coastline, 301.42 km were protected up to March 1987. In addition, a number of reservoir projects had been completed which have helped in moderating the flood peaks in the downstream reaches. Notable among these are: Hirakud Dam on the Mahanadi, dams in the Damodar system, Bhakra Dam on the Sutlej, Pong Dam on the Beas and Ukai Dam on the Tapti. All these works have afforded a reasonable degree of protection to about 1,324 lakh hectares of land.

During 1986, floods of varying intensities occurred in Andhra Pradesh, Assam, Bihar, Karnataka, Kerala, Maharashtra, Manipur, Nagaland, Rajasthan, Uttar Pradesh and West Bengal. The total damage, as reported by the states, was Rs 3,747.52 crore as against Rs 4,059 crore during 1985. In 1987, the south-west monsoon set in over mainland in south *i.e.,* Kerala on 2 June, just a day later than the normal date. Thereafter, the advancement of the monsoon was abnormally slow. Only by 27 July the monsoon covered the entire country. The delay in the on-set of the monsoon in north-west India including Delhi had broken the record of over 80 years.

The monsoon pattern was very unusual. Though severe floods occurred in Assam, Bihar and West Bengal, most parts of other states experienced a drought-like situation. The total damage as reported by states was Rs 2,564.35 crore.

FORECASTING

The Government of India set up a Flood Forecasting Organisation in 1954 to issue advance warnings about impending floods and alert the agencies concerned with rescue and relief. The Central Flood Forecasting Organisation has developed a network of about 147 forecasting stations catering to the requirements of most of the flood-prone inter-state rivers.

20-POINT PROGRAMME

Under the 20-Point Programme, stress is being laid on "better use of irrigation water" having the following components: (i) to develop the catchment areas and improve drainage in basins and deltas; (ii) to improve irrigation management in command areas; (iii) to prevent water-logging, salinity and wasteful use, and (iv) to coordinate the use of surface and groundwater.

INTER-STATE WATER DISPUTES

The major river basins of the country are almost all inter-state. With so many rivers flowing through more than one state, it is natural that differences would arise sometime or other amongst the concerned states with regard to the use, distribution or control of water of such rivers. This is especially so in view of the rapid pace of water resources development for irrigation, hydel-power generation, domestic and industrial water supply, etc.

Efforts are made, as far as possible, to resolve the disputes by negotiations amongst the states concerned, or with the assistance of the Centre. Adjudication through tribunals is resorted to when warranted.

Several inter-state water disputes have been resolved in the recent past. Some of these are: agreements regarding the construction of Thein Dam (Ravi), Bansagar Dam (Sone), Rajghat Dam (Betwa), development of the Damodar-Barakar, Ajoy, Mayurakshi, Mahananda, Subernarekha and Kanhar rivers, certain common rivers of Madhya Pradesh and Orissa and certain common rivers of Maharashtra and Madhya Pradesh.

Sharing of river waters of the Krishna, the Godavari and the Narmada by the concerned basin states has been settled through respective tribunals set up by the Government under the Inter-State Water Disputes Act, 1956. The Ravi and Beas Waters Tribunal set up on 2 April 1986, submitted its report to the Central government on 30 January 1987.

Two major inter-state river disputes have not yet been resolved. They relate to the further development and utilisation of the waters of the Cauvery and the Yamuna.

The National Development Council in March 1982 observed that a climate should be created in which national water plans are prepared keeping in view the national perspectives as well as the state and regional needs. With this objective, the Government has set up a National Water Resources Council with Prime Minister as chairman and Chief Ministers of all the states and union territories and concerned Central Ministers as members. One of the functions of the Council is to advise on the modalities of resolving inter-state differences on water resources development.

INTERNATIONAL AGREEMENTS

INDUS WATERS TREATY

India and Pakistan signed the Indus Waters Treaty on 19 September 1960, fixing and delimiting the rights and obligations of the two countries with regard to the use of the waters of the Indus river system. It came into force from 1 April 1960. As envisaged in the treaty, a permanent Indus Commission representing both the governments, has been set up to establish cooperative arrangements for the implementation of the treaty. India and Pakistan have also taken up bilaterally at Government-to-Government level, the dispute regarding the Tulbal Navigation Project on the Jhelum.

INDO-BANGLADESH JOINT RIVERS COMMISSION

The Indo-Bangladesh Joint Rivers Commission was set up in July 1972: (a) to maintain liaison between the participating countries in order to ensure the most effective joint efforts in maximising the benefits from common river systems to both the countries; (b) to formulate flood control works and to recommend implementation of joint projects; (c) to formulate detailed proposals on advance flood warnings, flood forecasting and cyclone warnings; (d) to study flood control and irrigation projects so that the water resources of the region can be utilised on an equitable basis for the mutual benefit of the people of the two countries, and (e) to formulate proposals for carrying out coordinated research on problems of flood control affecting both countries.

EXTERNAL ASSISTANCE

Government of India has programmed to extend irrigation to the entire land area that can be brought under irrigation (estimated to be 1,130 lakh hectares) by the turn of this century. This gigantic task would require all-out effort in the coming years. The total outlay for the major and medium irrigation up to the end of the Sixth Plan was Rs 14,879 crore, whereas the outlay for the Seventh Plan alone is about Rs 11,556 crore.

The country receives considerable assistance from World Bank group as well as other multilateral and bilateral agencies to augment the internal resources for executing major, medium and minor irrigation and command area development projects. The major source of the external asistance is the World Bank. Over the past 27 years, the World Bank has contributed about 410.61 crore dollars to the irrigation sector. Presently, there are 22 on-going projects receiving an assistance of about 281.5 crore dollars.

Negotiations for a credit assistance of 11.4 crore dollars have been concluded with the World Bank for implementation of the National Water Management Programme. Its purpose is to increase productivity and farm income in existing irrigation schemes through a more reliable, predictable and equitable irrigation service. To begin with, projects in Andhra Pradesh, Karnataka and Tamil Nadu have been included under the programme.

Other international agencies such as United States Agency for International Development (USAID) and International Fund for Agriculture Development (IFAD) are also helping in the development of irrigation in India. Since 1980, USAID has extended credit of 31.425 crore dollars for execution of medium/minor irrigation projects in Maharashtra, Madhya Pradesh, Rajasthan and Himachal Pradesh. IFAD has extended credit of 11.5 crore dollars independently or co-financed with the World Bank for Rajasthan Canal Project, Madhya Pradesh Medium Irrigation Project. Uttar Pradesh Public Tubewells Project and Bhima Project in Maharashtra.

The irrigation sector has also begun availing of grant assistance from the European Economic Community (EEC) and agreements have been signed for ECU 8.2 crore for minor irrigation projects in Andhra Pradesh, Gujarat, Maharashtra and Tamil Nadu. Federal Republic of Germany has extended aid worth DM 1.5 crore and DM 4.5 crore for the Rajasthan Minor Irrigation Project Phase I and Phase II respectively.

CENTRAL ORGANISATIONS

The Ministry of Water Resources has two attached offices, the Central Water Commission and the Central Soil and Materials Research Station ano eight subordinate offices.

CENTRAL WATER COMMISSION

Central Water Commission is a premier engineering organisation set up in 1945 in the field of water resources development, charged with the responsibility of initiating, coordinating and furthering, in consultation with the state governments concerned, schemes for control, conservation and utilisation of water resources for flood control, irrigation, navigation and hydel-power generation. The Commission has developed considerable technological knowhow in planning, investigation, design and management of water resources development and is sharing its knowledge with the developing world. Its work is divided into four functional wings: Design and Research, Planning and Programme, Water Planning and River Management. A Central Mechanical Organisation located in the Commission advises the state governments in the formulation of their water resources development project schemes. The Commission also has a field organisation, engaged in field investigation of specific river valley schemes and collection of hydro-meteorological data and flood forecasting work.

CENTRAL SOIL AND MATERIALS RESEARCH STATION

The Central Soil and Materials Research Station, New Delhi is a premier organisation which deals with geomechanics and construction material problems relevant to river valley projects' construction. It has been playing a very active role in imparting knowledge to engineers involved in contruction, designs, etc., all over the country by holding national level workshops with the help of UNDP experts.

SUBORDINATE ORGANISATIONS

The Ministry has the following eight subordinate organisations under its control:

(1) Central Water and Power Research Station; (2) Central Groundwater Board; (3) Farakka Barrage Project; (4) Ganga Flood Control Commission; (5) Sone River Commission; (6) Bansagar Control Board; (7) Mahi Control Board, and (8) Sardar Sarovar Construction Advisory Committee.

CENTRAL WATER AND POWER RESEARCH STATION

The Central Water and Power Research Station, Pune is devoted to the applied and fundamental research in the area of water and energy resources and water-borne transport. The research activities of the Station are carried out in ten laboratories. Since 1970, the institution is the recognised regional laboratory of the United Economic and Social Commission for Asia and Pacific for studies related to inland waterways and water-borne transport. Its clientele is drawn from Arab countries, Africa and South-East Asia.

CENTRAL GROUNDWATER BOARD

The Central Groundwater Board, Faridabad is the national apex body to carry out and guide the scientific development and management of the groundwater resources. It handles all matters relating to surveys, exploration, assessment, development and scientific management of the country's groundwater resources. Set up in 1954 and restructured in 1972 with the merger of the Groundwater Wing of the Geological Survey of India, its main activities include macro-level hydrogeological surveys and investigations, deep exploratory drilling coupled with geophysical logging and pump tests to study the sub-surface hydrogeological features and nationwide monitoring of groundwater regime and its quality through a network of hydrograph stations.

By the end of March 1988, it completed hydrogeological surveys in an area of 26.1 lakh sq km out of the total area of 32.9 lakh sq km of the country and plans to complete the entire coverage by 1990. It has already established a national network of 9,427 hydrograph stations and plans to increase it to 20,000 by 1995. The Board is presently having a fleet of 81 different types of drilling rigs and proposes to increase it adequately to achieve the target for completion of entire exploration programme by 1995.

FARAKKA BARRAGE PROJECT

The Farakka Barrage Project is designed to subserve the need for preservation and maintenance of the Calcutta port by improving the regime and navigability of the Bhagirathi-Hooghly river system. The Bhagirathi, the feeder canal and the navigation lock at Farakka Barrage form part of the Haldia-Allahabad inland waterways for which an Act has been passed. The principal components of the projects are: (a) a 2,240 metre-long barrage across the Ganga, designed to pass a flood discharge of 76,455 cumec or 27 lakh cusec, with a rail-cum-road bridge, the necessary river draining works and a head regulator on the right side; (b) a 213 metre-long barrage across the Bhagirathi at Jangipur, designed to pass a flood discharge of 1,700 cumec or 60,000 cusec; (c) a feeder canal of 1,333 cumec or 40,000 cusec carrying capacity and a 38.38 km-long taking off from head regulator on the right side of the Farakka Barrage, tailing off into the Bhagirathi below Jangipur Barrage, and (d) navigation works such as locks, lock channels, shelter basins, navigation lights and other infrastructures. All the principal works connected with the two barrages and the feeder canal have been completed. The rail-cum-road bridge over the Farakka Barrage provides a communication link between Assam, West Bengal and the rest of India which is most vital for the north-eastern region.

The Jangipur Barrage controls the flow from the Ganga into the Bhagirathi and also prevents the flow from the feeder canal into the Ganga. On the completion of the feeder canal and its commissioning on 21 April 1975, water started flowing in the Bhagirathi-Hooghly channel fulfilling the prime objective of the project for providing regulated upland discharge. A vast tract of area around Ahiron near Jangipur town has remained inundated throughout the years due to lack of cross drainage. To bring back the affected area to the conditions prevailing before the commissioning of the feeder canal by draining out the accumulated water, works on inundation scheme on Pagla-Bansoi basin, have been taken up.

The navigation lock at Farakka was completed and tested successfully in May 1986. The lock was dedicated to the nation on 16 November 1987. With the commissioning of this lock, the first national waterway from Haldia to Allahabad has become a through route, to be further developed by the Ministry of Surface Transport.

The Ganga has a tendency to erode its banks. A detailed scheme for strengthening of the spurs and marginal embankment on the left bank upstream of the barrage, has been sanctioned. The Ganga on the right bank upstream and downstream of the Bhagirathi off-take has been eroding its banks. Approval has been accorded for carrying out anti-erosion and other protection works in the vicinity of the Jangipur Barrage complex.

GANGA FLOOD CONTROL COMMISSION

Ganga Flood Control Commission, Patna established in April 1972, is primarily concerned with the preparation of a comprehensive plan for flood control in the Ganga basin and arraging its implementation in a coordinated manner through the states in the basin. The Commission is responsible for technical scrutiny and examination of flood control, drainage, anti-water logging-erosion and anti-erosion schemes estimated to cost Rs 60 lakh each or more in the basin.

BANSAGAR CONTROL BOARD

In pursuance of an inter-state agreement among Madhya Pradesh, Uttar Pradesh and Bihar, the Bansagar Control Board was constituted in January 1976 with headquarters at Rewa by the Ministry to effect efficient, economical and early execution of Bansagar Dam and connected works on the Sone River (excluding canal and power systems which will be carried out by the respective states).

MAHI CONTROL BOARD

Mahi Control Board, Udaipur was set up by the Government in 1971 in consultation with Rajasthan and Gujarat, to ensure early execution of Mahi Bajajsagar project which is a joint venture of the two states. It is now in overall charge of Unit I of the project, including technical and financial aspects.

SARDAR SAROVAR CONSTRUCTION ADIVISORY COMMITTEE

The Sardar Sarovar Construction Adivisory Committee, Vadodara in Gujarat has been set up in accordance with the direction of the Narmada Water Disputes Tribunal for the purpose of scrutinising the estimates, technical features, designs of Units I and III (dam and power portion) and the annual works programme of the project in Gujarat, which is an inter-state project benefitting Gujarat, Madhya Pradesh, Maharashtra and Rajasthan.

STATUTORY BODIES

Three statutory bodies are functioning under the Ministry. These are: Narmada Control Authority, Brahmaputra Board and Betwa River Board.

NARMADA CONTROL AUTHORITY

The Narmada Control Authority was set up by the Government in pursuance of the decision of the Narmada Water Disputes Tribunal. It started functioning from December 1980 and it was further strengthened during 1987. The role of the authority comprises coordinating and directing the Narmada basin development projects and taking such measures as are necessary or expedient for the protection of the environment and preparing schemes for the welfare and rehabilitation of oustees and other affected persons due to these projects.

BRAHMAPUTRA BOARD

The Government constituted the Brahmaputra Board under the Brahmaputra Board Act, 1980, with the specific object of preparing a master plan for the control of flood and bank erosion and improvement of drainage of the Brahmaputra valley. The jurisdiction of the Board includes the Barak valley. The Act specifies that the Brahmaputra Board shall carry out surveys and investigations and prepare reports of multi-purpose project required for the master plan for the control of floods and bank erosion, along with development and utilisation of water resources of the valley for irrigation, hydro-power, navigation and other beneficial purposes. The Board shall also take up construction of multi-purpose project integrated in the master plan.

BETWA RIVER BOARD

The Rajghat Dam Project on the Betwa, a tributary of the Yamuna, is an inter-state project of Madhya Pradesh and Uttar Pradesh. In accordance with the inter-state agreement between the states in 1973, the Betwa River Board was constituted under the Betwa River Board Act, 1976 for the early execution of the Rajghat Dam project. The Board's office is in Jhansi.

REGISTERED SOCIETIES

Three registered societies, National Institute of Hydrology, National Water Development Agency and Central Board of Irrigation and Power, are with the Ministry of Water Resources.

NATIONAL INSTITUTE OF HYDROLOGY

National Institute of Hydrology, Roorkee is a premier national research organisation set up in 1978 to undertake, aid, promote and coordinate systematic and scientific work on all aspects of hydrology.

NATIONAL WATER DEVELOPMENT AGENCY

National Water Development Agency was established in 1982 to carry out studies and investigations of possible storage-reservoir sites and inter-connecting links in order to establish the feasibility of the proposals under the national perspective plan. Detailed studies about the quantum of water which is surplus in various peninsular rivers and which can be transferred to other basins after meeting the reasonable needs of the basin state and feasibility reports of various components of schemes relating to peninsular rivers development, are being prepared. The studies are expected to be completed by the end of the Eighth Plan.

CENTRAL BOARD OF IRRIGATION AND POWER

Central Board of Irrigation and Power, since its inception in 1927, has been entrusted with the task of coordinating all the research activities in the field of irrigation and power. It encourages the adoption of the results of the research in the actual projects.

PUBLIC SECTOR UNDERTAKING

Water and Power Consultancy Services (India) Ltd. was set up in June 1969 to project and channelise the Indian expertise in the field of power and water resources development and their utilisation. The company offers consultancy services in all aspects of water resources development including hydro and thermal power, dams, integrated irrigation including downstream aspects, groundwater, supply and treatment, inland waterways and navigation hydrographic surveys, etc.

17 Rural Development

THE launching of the Community Development Programme in 1952 was a landmark in the history of India which ushered in an era of development with the participation of the people. It adopted a systematic integrated approach to rural development with a hierarchy of village level workers and block level workers drawn from various fields to enrich rural life. Agriculture, animal husbandry, public health, women's development, rural industries, etc., found special niche in the framework cast for this purpose. Five thousand National Extension Service (NES) Blocks were created under the Community Development Programme by the end of the Second Five Year Plan. During the Third Five Year Plan, the momentum was maintained through a series of developmental schemes though allocations under the NES programme tapered. This was succeeded by the Small Farmers' Development agencies followed by Marginal Farmers' Development agencies, Crash Schemes for Rural Employment, Food for Work Programme, Drought-Prone Areas Programme and Desert Development Programme in the early seventies.

The concept of *Panchayati Raj* for decentralised administration was evolved by the Balwantray Mehta Committee in 1957 which studied the community development projects. Panchayati Raj institutions came up in several parts of the country in the following decade. Efforts to rejuvenate the institutions still continue.

Land reform measures for abolition of intermediary tenures, tenancy reforms, imposition of land ceiling on agricultural holdings, distribution of surplus land to the landless agricultural workers and consolidation of land holdings were introduced through a series of state legislations under Central guidelines. The emphasis shifted to fulfilling minimum needs of the people during the Fifth Five Year Plan. A strategy of direct attack on poverty was adopted in the Sixth Plan as the benefits of general development programmes had not proved successful for the removal of poverty. Forty eight per cent of the population was found to be living below the poverty line at the beginning of the Sixth Five Year Plan.

The Integrated Rural Development Programme (IRDP) initiated in 1978-79 and extended to all the development blocks in the country in 1980-81 was conceived as one of the instruments for direct attack on poverty. It dealt with individual rural families below the poverty line.

Simultaneously, the National Rural Employment Programme (NREP), assuring wage employment to the unemployed rural population, was introduced in 1980. In the subsequent phase, concentration on the rural landless for wage employment led to the introduction of Rural Landless Employment Guarantee Programme (RLEGP) in 1983. The *Indira Awaas Yojna* was added as a component of the programme in the Seventh Plan for constructing houses for scheduled castes/tribes and freed bonded labourers. The establishment of the Technology Mission on Drinking Water and Related Water Management gave a new thrust to the Rural Water Supply Programme. Safe and adequate drinking water is planned to be provided to the entire rural population by the end of the Seventh Five Year Plan.

The impact of the poverty alleviation programmes coupled with the development in various sectors reduced the rural population below the poverty line up to 37 per cent by the beginning of the Seventh Plan. The target is to bring this down to 28 per cent by the end of the Seventh Plan period.

INTEGRATED RURAL DEVELOPMENT PROGRAMME

The concept of an integrated programme of rural development based on the local needs, resources endowments and potentialities was initiated in 1976-77 in 20 selected districts. In 1978-79, it was reviewed to integrate the methodology and approach of the three major on-going schemes of SFEA, CAD and DPAP. The new programme was introduced in 2,300 development blocks, 2,000 blocks covered by special programmes like the Small Farmers' Development Agency (SFDA), Drought-Prone Areas Programme (DPAP), Command Area Development (CAD) and 300 blocks outside special programme areas. Three hundred new blocks were added the next year and at the end of 1979-80, the programme was in operation in 2,600 blocks. From 2 October 1980, the IRDP was extended to all the blocks in the country. It is also a part of the 20-Point Programme.

The Integrated Rural Development (IRDP) is a major instrument of Government strategy to alleviate poverty. Its objective is to enable selected families to cross the poverty line through a strategy of productive assets endowment.

The strategy for IRDP during the Seventh Plan uptil now has been two-fold. First, to consolidate the gains made during the Sixth Plan and to provide supplementary dose of assistance to those beneficiaries who were not able to cross the poverty line for no fault of theirs. The next part of the strategy has been to provide a package of assistance to the new beneficiaries in such a way that they cross the poverty line with one dose of assistance.

While the Central and state governments provide financial resources for the programme and lay down broad guidelines for its implementation, the main administrative unit for its implementation is the District Rural Development Agencies (DRDA). The cutting edge level in implementation is the Block. Here a number of extension officers are provided for programme implementation. The back-up support at the state level is provided through a state level coordination committee.

At the Central level, in the Department of Rural Development, there is a Central Committee on IRDP and allied programmes of Training of Rural Youth for Self-Employment (TRYSEM) and Development of Women and Children in Rural Areas (DWCRA), headed by Secretary. Its main functions include framing and revision of the guidelines and ensuring their effective implementation.

During the Sixth Plan, the programme achieved remarkable results in both physical and financial terms. The families assisted were around 165.62 lakh and investment was of the order of about Rs 4,762.78 crore. Of this, Rs 3,101.61 crore were mobilised as term credit. In terms of sector-wise coverage there had been considerable diversification in the activities as the coverage in the primary sector decreased from 93.56 per cent in 1980-81 to 54.5 per cent in 1984-85.

An amount of Rs 355 crore has been provided in the Central Budget for the implementation of IRDP, out of which Rs 345 crore is being made available to the state governments. The total allocation for IRDP including states' share for the year 1988-89 is Rs 687.95 crore. 31.93 lakh families are targetted to be assisted during the year 1988-89.

TRYSEM was launched as a Centrally-sponsored scheme on 15 August 1979. The main thrust of this scheme is on equipping rural youth in the age group of 18-35 years with necessary skills and technology to take up vocations of self-employment in the broad fields of agriculture and allied activities, industry, services and business. Simultaneously with the launching of TRYSEM, another scheme for strengthening of infrastructure of training institutions was also launched with the Central assistance.

Liberalisation of the norms for expenditure under recurring assistance, more rapport between DRDAs and employment exchanges for employment opportunities and exploring the possibility of setting up groups for the manufacture/assembly of non-traditional items for which there is good demand in the market, are some of the steps taken to improve the implementation of the scheme. About 16 lakh rural youth have already been trained.

The main objective of the programme for the development of Women and Children in Rural Areas (DWCRA) is to improve the lot of rural women through the creation of income-generating activities in a district. The districts to be covered under the programme are selected keeping in view the low literacy rate and the high child mortality rate. It envisages formation of groups of 15-20 rural women each for carrying on income-generating activities. Each group is sanctioned a revolving fund of Rs 15,000. In the case of states, the amount is shared equally by the Centre, the state government and the UNICEF. In the case of union territories, the Central government bears Rs 10,000 per group and the balance is borne by the UNICEF. The UNICEF also bears the expenditure on staff component. The programme achieved considerable progress during 1987-88 with the formation of 4,959 groups with 82,265 women members. The target for 1988-89 is to form 7,500 groups. A sum of Rs 11.41 crore has been provided in budget estimates for 1988-89. The outlay for the Seventh Plan is Rs 48.05 crore.

The Council for Advancement of People's Action and Rural Technology (CAPART), an independent organisation of the Department of Rural Development gives grants-in-aid to voluntary agencies for rural development. An amount of Rs 18.88 crore was placed at the disposal of CAPART in 1988-89 for various schemes. A Standing Committee on Projects scrutinises proposals received from voluntary agencies and grants are released on the basis of its recommendations.

During 1985-86, construction of multi-purpose community centres was taken up as a part of the scheme. These centres are intended to provide a central place where rural women can meet for group activities as well as for training and demonstration of new technology. Up to 31 March 1988, more than 275 centres were approved. Two hundred multi-purpose community centres in DWCRA districts are targetted to be constructed during 1988-89.

NATIONAL RURAL EMPLOYMENT PROGRAMME

National Rural Employment Programme (NREP) was launched in October 1980 as a Centrally-sponsored scheme on 50 : 50 sharing basis between Centre and states with the three-fold objectives of generating additional gainful employment opportunities, creating durable community assets and improving the overall quality of life in rural areas. The NREP is the culmination of the previous experience in implementing employment schemes like Rural Manpower Programme, Crash Scheme for Rural Employment, Pilot Intensive Rural Employment and Food for Work Programme.

Under NREP, all types of work which result in creating durable community assets are allowed to be taken up. In the case of scheduled caste/tribe beneficiaries, work benefitting individuals are permitted. Shelf-of-projects are prepared on the basis of identified work projects reflecting the felt needs of the rural community as ascertained in the *Gram Sabha* meetings. Out of the shelf of projects, annual action plan for each year is drawn by the district rural development agencies with due regard to the availability of funds. The programme is implemented through DRDAs. At the district level, at least 50 per cent of expenditure should be on wage component. Ten per cent of the allocation is earmarked for works directly benefitting scheduled castes/scheduled tribes including targetted utilisation of Rs 6 crore on rural sanitary latrines. The earlier earmarking of ten per cent funds for social forestry was revised to 20 per cent from 1985-86 which has further been raised to 25 per cent from 1986-87.

During the Sixth Plan period, Rs 1,843 crore was spent on this scheme in both Central and states' share, creating 17,751 lakh man-days work. Employment generated for SC/ST during the period was roughly 45 per cent of the total employment generated. The assets created to strengthen the rural infrastructure included covering of 4.69 lakh hectares of land under social forestry, 4.80 lakh irrigation and group-housing wells, 54,000 village tanks, 61 thousand drinking water wells/ponds, construction of 2.23 lakh schools/*balwari* centres and 4.45 lakh km of rural roads were either constructed or improved. The area under minor benefits brought was 9.32 lakh hectares besides reclamation/soil conservation of 5.14 lakh hectares of land. The programme also had a substantial impact on stabilising wages in the rural areas, containing prices of foodgrains and raising the standard of living of the rural population. The basic priorities of the Seventh Plan are food, work and productivity. An outlay of Rs 2,487.47 crore including states' share of Rs 1,236.66 crore has been provided for the Seventh Plan period. It is envisaged to generate about 2,900 lakh man-days per annum. During the first three years of Seventh Plan an investment of Rs 2,035 crore has been made in generating 108.15 crore man-days of employment.

RURAL LANDLESS EMPLOYMENT GUARANTEE PROGRAMME

Rural Landless Employment Guarantee Programme (RLEGP) was launched on 15 August 1983 to generate additional employment in rural areas particularly for the rural landless workers. The programme has three basic objectives: (i) to improve and expand employment opportunities particularly for the rural landless; (ii) to create productive and durable assets for strengthening rural infrastructure which will lead to rapid growth of rural economy and steady rise in the employment opportunities for the rural poor, and (iii) to improve the overall quality of life in rural areas.

The programme is fully funded by the Central government. The state governments are required to prepare specific work projects and get them implemented through various agencies under them. The wage component in the projects undertaken is required to be a minimum of 50 per cent of the cost of the project. During the Sixth Plan period, 2,628.1 lakh man-days of employment were generated with an investment of Rs 384.74 crore. In the Seventh Plan, an outlay of Rs 1,743.78 crore has been provided with the employment generation target of 101.3 crore man-days. During the first three years of the Seventh Plan, 8,557.8 lakh man-days of employment has been generated with an investment of Rs 1,738.48 crore including the value of subsidised foodgrains distributed to the workers under the programme. For 1988-89, an allocation of Rs 730 crore has been made. The programme has been given new dimension in the Seventh Plan. During 1988-89, a new scheme known as 'Million Wells' as a sub-scheme of the RLEGP was launched for construction of open irrigation wells for small and marginal farmers belonging to scheduled castes and scheduled tribes, who are below the poverty line. Under the scheme, 1 10 lakh irrigation wells are expected to be constructed at the cost of Rs 171 crore. Indira Awaas Yojana, and the social forestry continue as earmarked sectors under the Programme since 1985-86 with an allocation of Rs 124 crore, and Rs 70.50 crore for the year 1988-89.

DROUGHT—PRONE AREAS PROGRAMME (DPAP)

DPAP was started as an integrated area development programme in 1973 as a long-term measure for restoration of ecological balance and optimum utilisation of the land, water, livestock and human resources and to mitigate the effects of drought. The programme aims at: (a) promoting a more productive dryland agriculture on the basis of the soil and water resources and agro-climatic conditions of the areas with suitable cropping pattern; (b) development and productive use of water resources of the area; (c) soil and moisture conservation including promotion of proper land use practices and water harvesting; (d) afforestation including farm forestry and pasture development, and (e) livestock development including pasture and fodder resources development. DPAP is being implemented in 615 blocks in 91 districts of 13 states from 1985-86 covering about 5.36 lakh sq km area which is about 19 per cent of the geographical area of the concerned states. It covered about 7 to 7.5 crore people which is about 12 per cent of the population of the concerned states.

DPAP continues to be Centrally-sponsored scheme and the allocation is shared equally by the Centre and the concerned states. During the Sixth Plan an expenditure of Rs 337.41 crore was incurred on this programme as against the allocation of Rs 404.30 crore. A Central outlay of Rs 237 crore during the Seventh Plan was made for this programme. During the first three years of the Seventh Plan an amount of Rs 121.71 crore has been released to the states as the Central share of allocation and an expenditure of Rs 267.04 crore has been incurred.

DESERT DEVELOPMENT PROGRAMME (DDP)

DDP was started in 1977-78 with the objective of controlling desertification, restoring ecological balance and creating conditions which would improve the economic level of the people in desert areas. These objectives are sought to be achieved through activities such as: (a) afforestation with special emphasis on shelter-belt plantation, grassland development, sand dune stabilisation; (b) development and productive use of water resources; (c) construction of water harvesting structures and development of agriculture and horticulture, etc. DDP covers both the hot and cold desert areas. The programme covers 131 blocks in 21 districts of five states *i.e.,* 119 blocks in 17 districts in Gujarat, Haryana and Rajasthan hot deserts and 12 blocks in four districts in Himachal Pradesh and Jammu and Kashmir cold deserts. The programme covers a total area of about 3.62 lakh sq km constituting 42 per cent of the total geographical area of the concerned states and 150 lakh population which is about 16 per cent of the total population of the states concerned.

DDP was initially started as a Central sector scheme, but from 1979-80 up to the end of the Sixth Plan it remained a Centrally-sponsored scheme with equal sharing of funds by the Centre and the states concerned. From the beginning of the Seventh Plan it has again been converted into a Central sector scheme with cent per cent funding by the Central government. During the Sixth Plan, an expenditure of Rs 73.55 crore was incurred against the allocation of Rs 94.85 crore. For the Seventh Five Year Plan, an allocation of Rs 245 crore has been made for the programme. During the first three years of the Seventh Plan, Central funds of the order of Rs 92.84 crore were released and an expenditure of Rs 100.17 crore has been incurred. Table 17.1 gives the physical achievements of DPAP and DDP.

TABLE 17.1 PHYSICAL ACHIEVEMENTS[1]

Sector	Drought-prone areas programme (DPAP) ('00 hectares)	Desert development programme (DDP) ('00 hectares)
1. Area treated under soil and moisture conservation	20,732	602
2. Irrigation potential created	7,863	177
3. Area covered under forestry and pasture development	11,823	1,373

1. For the period till March 1988.

To facilitate, drought-proofing and help checking advancement of desert, a minimum of 75 per cent of the allocation has been prescribed for the above three core activities.

A National Committee has been set up under the chairmanship of Member (Agriculture), Planning Commission, with wide-ranging terms of reference for the appraisal of these two programmes.

PANCHAYATI RAJ

Panchayati Raj institutions are in existence almost in all states and union territories with variations in structural pattern. Generally, Panchayati Raj system involves a three-tier arrangement-village level, block level and district level. The first tier at village level is commonly known as *Gram Panchayat*, the second tier at block level as *Panchayat Samiti* and the third tier at distrit level as *Zila Parishad*, except in some states/union territories. However, the second tier is known as *Mandal Panchayat* in Andhra Pradesh, *Taluka Panchayat* in Gujarat, Taluka Development Board in Karnataka, *Janapad Panchayat* in Madhya Pradesh, Panchayat Union in Tamil Nadu, *Kshetra Samiti* in Uttar Pradesh and *Anchal Samiti* in Arunachal Pradesh. Similarly, the third tier is called *Mohkuma Parishad* in Assam and District Development Councils in Karnataka and Tamil Nadu.

The tenure of Panchayati Raj institutions ranges between three to five years. These institutions are responsible for promotion of agriculture, rural industries, provision of medical relief, maternity, women and child welfare, maintaining common grazing grounds, village roads, tanks, wells and provision for sanitation and execution of other socio-economic programmes. In some places they also provide primary education and collect land revenues. Today, the Gram Panchayats are involved for identification of beneficiaries in the anti-poverty programmes for IRDP and execution of other rural development programmes like NREP. There exists about 2.20 lakh Gram Panchayats, 4.5 thousand Panchayat Samitis and 357 Zila Parishads (including superseded institutions).

To sum up, the Panchayat, the cooperatives and the schools are the basic institutions at the village level for carrying out various programmes of rural development.

LAND REFORMS

Land reforms have remained one of the major policies for rural and economic development ever since the inception of the planning process. The old agrarian structure was not very conducive to modernisation of agriculture and a more egalitarian social structure. The land reforms programme has, therefore, been designed to break the old feudal socio-economic structure of rural India to provide greater fillip to modernisation of agriculture and promote agricultural productivity. It is also intended to bring in the largest possible number of poor farmers and agricultural workers in the mainstream of the process of economic development. It helps to raise the status of the weaker sections of society and gives them a sense of belonging to the mainstream of social life. The programme of land reforms has, therefore, been rightly viewed not only as an economic development measure but also as a measure of social uplift. The Seventh Plan views land reform as an intrinsic part of the anti-poverty strategy.

Intermediary tenures have been abolised as a result of which more than 200 lakh tenants have been brought in direct contact with the State. Besides, a large part of an estimated 60 lakh hectares of waste, fallow and other classes of land vested in the State have been distributed to landless and marginal landholders. However, in some states some intermediary tenures still remain to be abolished while residual work is also pending in some states after abolition.

TENANCY REFORMS

Legislative provisions have been made in most states of the country providing ownership rights on tenants/security of tenure to tenants/sub-tenants/share-croppers. Provisions regarding fixation of rents payable by the tenant and prohibition of eviction except on specified grounds further strive to safeguard the interest of tenants. Seventy seven lakh tenants have been conferred ownership rights in respect of 56 lakh hectares of land.

Several states enacted land ceiling laws in the 50s and 60s. As a result of this, more than 10.36 lakh hectares of land were taken over by the State and out of this 8.5 lakh hectares were distributed to landless poor. The land ceiling laws were subsequently re-enacted by the states in conformity with the national guidelines issued in 1972. These laws are being implemented vigorously. Till April 1988, in all, 29.3 lakh hectares have been declared surplus in the existing and revised ceiling laws. Out of this, possession of 24.28 lakh hectares has been taken and 17.97 lakh hectares of this land has been distributed to 41 lakh landless agricultural labourers and other eligible persons.

Since land reforms measures seek to change socio-economic relations among different sections of the rural society, its implementation is a difficult task.

Despite many legislative and administrative measures taken to insulate land reforms cases from being challenged in the courts, parties have found ways to delay the implementation. Almost 5.67 lakh hectares are involved in litigation and this land is not, therefore, presently available for distribution. The states have been urged to take legislative and administrative measures to expedite cases pending in litigation. Enough protection has also been given to the land laws in the Constitution. Out of 202 laws in the Ninth Schedule, as many as 169 laws pertain to land reforms.

FINANCIAL ASSISTANCE

Since much of the land distributed under ceiling laws is of poor quality, the assignees have to make heavy investment for efficient cultivation. They are being provided financial assistance since 1975-76 under a Centrally-sponsored plan scheme. The assignees are also accorded priority for benefits admissible to them under other on-going programmes, *viz.*, IRDP, NREP and RLEGP. So far financial assistance by way of grant to the tune of Rs 33.49 crore as Central share has been released to different states/union territories. The rate of assistance under this scheme is presently Rs 2,500 per hectare.

LAND RECORDS

Correct and up-to-date land records are an essential pre-condition for effective implementation of land reforms measures, particularly for security of tenure for tenants and share-croppers. It is also necessary to ensure smooth flow of credit and agricultural inputs to landholders. In most of the states, records are updated through the annual crop register. Revisional survey and settlement operations are being carried out in Andhra Pradesh, Assam, Bihar, Gujarat, Himachal Pradesh, Kerala, Madhya Pradesh, Meghalaya, Orissa, Sikkim, Tripura and West Bengal. Monitoring of implementation of the land reforms has been intensified with emphasis on early completion of land records. A Centrally—sponsored scheme for revitalising the revenue administration and updating the land records is being implemented. This is done with the primary purpose of strengthening the machinery for survey and settlement including use of new technology such as photomapping, aerial survey, mechanisation of land records, restructuring of revenue machinery and training infrastructure. The scheme has been taken up in Bihar and Orissa in the first phase. A scheme on pilot project for computerisation of land records is also being taken up in 11 selected states to evolve a future policy with regard to computerisation of land records during the Eighth Plan.

CONSOLIDATION OF HOLDINGS

Highly fragmented agricultural holdings stand in the way of rationalisation of agriculture and adequate investment of capital and inputs of land. Consolidation of these fragmented holdings is thus an important measure to boost efficiency and economy in agriculture. It also provides a unique and cheaper opportunity for planned development of villages. Legislative provisions have been made in most of the states for implementing consolidation of holdings scheme. Till now 563.2 lakh hectares have been consolidated. Bulk of it has been in Maharashtra, Uttar Pradesh, Haryana, Punjab, Madhya Pradesh, Gujarat, Rajasthan and Karnataka.

The Land Acquisition Act, 1894 is the basic law for the acquisition of land for public purposes and for companies. This Act has been comprehensively amended by the Land Acquisition (Amendment) Act, 1984. The Act provides a maximum time limit of three years of completion of land acquisition proceedings, leading to the award to be given by the district collector.

RURAL WATER SUPPLY PROGRAMME

Supply of drinking water is primarily the responsibility of the state governments and constitutes an important part of the Minimum Needs Programme (MNP) in the State Plan. The Central government supports the programme with the fully Centrally-sponsored Accelerated Rural Water Supply Programme (ARWSP). Besides, a National Mission on Drinking Water in villages has been launched. All the three programmes aim at achieving the goal of the International Drinking Water Supply and Sanitation Decade by providing cent per cent rural water supply by 1990. The National Drinking Water Mission has a clear goal of covering residual problem villages (1.62 lakh at the beginning of Seventh Plan) by 1990. It would provide low cost solutions to identify problems associated with the supply of safe drinking water through the application of scientific and technological inputs. It has taken up 55 pilot projects as mini mission areas covering various states and union territories and five sub-missions during the Seventh Plan. During the Seventh Plan, priority is being given to hard-core problem villages spilled over from the Sixth Plan followed by those which were subsequently identified as problem villages and then partially covered villages. A problem village is one where there is no source of safe drinking water within a distance of 1.6 km or within a depth of 15 meters. Other problem villages are those where the available water has excessive salinity, iron, fluoride or other toxic elements or where diseases like cholera, guineaworm etc.,are endemic.

However, after covering problem villages, water supply facilities are proposed to be extended to villages as per liberalised norms *i.e.,* within a distance of 0.5 km and also to enhance the present norm of water supply from 40 litres per capita per day to 70 litres per capita per day and by providing one source (tubewell with hand-pump or stand-post) for a population of 150 persons against the existing norm of one source for every 250-300 persons. Priority is being accorded for coverage of scheduled caste/tribe habitations. At the end of Sixth Plan, 1.62 lakh problem villages remained to be covered during the Seventh Plan. Of these, in the first three years of the Plan, 1,06,000 villages have been covered.

The Seventh Plan outlay is Rs 1,201.22 crore under ARWSP, Rs 150 crore under National Mission and Rs 2,253.25 crore under state sector MNP.

Primacy has been given to provision of safe drinking water to SC/ST habitations. The states have been directed to earmark funds from ARWSP in the same proportion as have been earmarked under Special Component Plan and the Tribal Sub-Plan.

Through the National Drinking Water Mission, science and technology inputs have been harnessed in a big way including remote sensing and satellite imagery, geophysical investigations, etc., to effect scientific source finding. Steps have also been initiated to transfer technologies of water purification from laboratories to factory floors and then on to the field for removing salinity, excess iron and excess fluoride.

CENTRAL RURAL SANITATION PROGRAMME (CRSP)

The Central Rural Sanitation Programme provides sanitation facilities in villages with the aim of improving the quality of life and upholding the dignity and privacy of rural women. It also aims to supplement other programmes on sanitation implemented under RLEGP, NREP, etc., by construction of sanitary latrines for individual households. Under this programme, the entire cost of construction of sanitary latrines for beneficiaries belonging to SC/ST is made by the Government. For other IRDP assisted families, part of the cost is provided as subsidy, while the balance is met by the beneficiaries themselves. Benefitting from the past experience of the performance of the programme, there is a proposal to restructure the programme to make it more popular and acceptable. Community involvement and social communication will be built into the programme in a big way. During 1987-88 and 1988-89, a sum of Rs 20 crore each was released under the programme. The outlay for 1989-90 is Rs 40 crore.

MONITORING

The Department of Rural Development had developed a comprehensive system of monitoring and concurrent evaluation in respect of major programmes like IRDP, NREP, RLEGP and Rural Water Supply Programmes. The physical and financial achievements under each programme are being obtained from the state/district implementing agencies at regular intervals on suitably prescribed formats. The performance of various programmes is reviewed on the basis of these reports and corrective as well as supportive measures are taken with the state governments to improve its implementation.

COMPUTERISATION OF RURAL INFORMATION

A scheme of Computerised Rural Information System (CRISP) was started on a pilot basis in 10 districts in 1985, with National Informatics Centre (NIC) as the nodal agency. The experience gained under CRISP has shown that it is possible to develop quickly a computerised data base on rural development at the DRDA level. It has been decided to set up mini computer cells immediately in all DRDAs, using the funds available for administrative infrastructure under

IRDP. The computerisation of rural information at district level will help in strengthening the monitoring and streamlining the implementation of various rural development programmes.

CONCURRENT EVALUATION

Besides monitoring the performance of the various rural development programmes through periodical returns and visits by senior officers to field, the Department of Rural Development is also doing concurrent evaluation studies in respect of major rural development programmes. This is being done with the help of independent research institutions to ascertain the areas of concern and to improve and streamline the implementation of the programmes. The first round of concurrent evaluation of IRDP was taken up during September 1985 to October 1986, with the help of 29 research institutions. On the basis of the findings of the survey brought out on monthly basis, corrective and supportive measures were taken with the implementing agencies. The second round had been undertaken during January to December 1987 with the help of 27 research institutions. Similarly, concurrent evaluation of Rural Water Supply Programme was also undertaken from October 1986 to September 1987 to assess the drinking water situation in rural areas. The concurrent evaluation of National Rural Employment Programme (NREP) was taken up from November 1987 to October 1988. Similar concurrent evaluation studies will also be taken up in future in respect of RLEGP, DPAP, DDP and other rural development programmes.

RURAL ROADS

The development of rural roads mainly forms part of the Minimum Needs Programme (MNP) in the state sector and outlays for it are provided in the plans of states/union territories. The Seventh Plan document envisages provision of all-weather road connections to all villages having population over 500 and 50 per cent of villages with population between 200—500 in about 10 years' time. About 50 per cent of the villages to be so connected were to be covered during the Sixth Plan.

In the Seventh Plan, an outlay of Rs 1,729.40 crore had been made in the state plans for the programme. The outlays under NREP and RLEGP would also be used as supplementary funds for construction of rural roads.

In addition to the rural roads programme under MNP in the state sector, a Centrally-sponsored scheme with cent per cent grant-in-aid to states for development of roads in tribal areas is being implemented since the Sixth Plan. An amount of Rs 14 crore is provided for the purpose in the Seventh Plan. Against this an amount of Rs 8.98 crore was released. Considering the fact that tribal roads should be the responsibility of state governments, the Government of India has decided to discontinue the scheme from 1987-88. Accordingly, funds will be provided during the rest of the Seventh Plan period only for meeting the committed liabilities.

Besides the above scheme, on the basis of the report of the working group set up to formulate a special area plan for the dacoit-infested districts of Uttar Pradesh, Madhya Pradesh and Rajasthan, a scheme for road construction in the special problem areas (ravine areas) is also being implemented by the Department of Rural Development. The works to be taken up are financed on 50:50 basis amongst the concerned states and the Government of India. The scheme did not find place in the Seventh Plan document and funds are being provided on a year-to-year basis. Works costing over Rs 75.33 crore have been sanctioned so far under the scheme and over Rs 18.06 crore have been released during the last three years. An equal amount was to be provided by the states. The outlay for 1988-89 is Rs 12 crore.

TRAINING

To ensure the desired level of professional competence as well as organisational efficiency and effetiveness for rural development, training programmes have been given due importance. The National Institute of Rural Development, Hyderabad, an autonomous organisation fully funded by the Central government has come to be recognised as an apex institute for conducting research and training programmes. It is proposed to establish/strengthen atleast one apex training institute in each state with European Economic Community (EEC) assistance. Another Central scheme aims at establishing 90 Extension Training Centres all over the country. The concept of Composite Rural Training and Technology Centres is under reconsideration.

AGRICULTURAL MARKETING

The Directorate of Marketing and Inspection of the Department of Rural Development advises the Central and state governments on agricultural marketing problems. It enforces compulsory quality control on as many as 41 agricultural commodities before these are exported. Besides, a number of important commodities are graded under *Agmark* for internal consumption. These include cotton, vegetable oils, *ghee*, cream, butter, eggs, rice, wheat flour, *besan*, jaggery, *bura*, curry powder, honey, ground spices, potatoes, fruits, etc. In all, grade specifications under Agmark has been formulated for 142 commodities.

Twenty two regional laboratories have been set up at different places in the country to ensure purity and quality of Agmark products. The Central Agmark Laboratory at Nagpur functions as the apex laboratory. The laboratories at Nagpur, Bombay, Calcutta and Madras have been equipped with biological testing units. A unit will soon be operative at New Delhi regional laboratory also.

A large number of producer-level grading centres have also been established in various states to help farmers in getting price commensurate with quality. Agricultural commodities worth Rs 883.16 crore were graded at 958 producer-level grading centres during 1987-88.

Regulation of markets is yet another important function of agricultural marketing. It is done by the state governments. The Directorate of Marketing and Inspection renders advice in framing market legislation and its enforcement. The number of regulated markets in the country at the end of March 1988 was 6,052.

REGULATION OF MARKETS

The Directorate is implementing since 1972-73 a scheme for providing Central assistance for the development of infrastructural facilities in selected regulated markets. The markets covered are those located in command area and markets handling commercial crops. Terminal markets for fruit and vegetables are also assisted under this scheme. As many as 598 selected regulated markets have been granted Central assistance of Rs 27.12 crore till March 1988.

The Directorate is also implementing another scheme since 1977-78 to assist primary rural markets like *haats* and *mandis* and also rural wholesale markets located in specified areas to develop infrastructural facilities. Under the scheme, grant-in-aid to the extent of Rs 43.45 crore has been provided to 2,784 rural primary markets and 161 rural wholesale markets up to March 1988.

The Directorate is also extending financial assistance to selected regulated markets for providing grading facilities at producer's level for cash crops such as tobacco, jute, cotton, groundnut and cashewnut. An amount of Rs 0.57 lakh was granted under the scheme during 1987-88.

The scheme of marketing research and surveys has two programmes, namely: (i) market research and planning and (ii) market planning and design. The Directorate carries out countrywide market surveys on important agricultural, horticultural and livestock commodities to identify and study the problems of agricultural marketing and to suggest suitable remedial measures. Surveys of a number of wholesale markets for fresh fruit and vegetables have been carried out as a part of the activities of Market Planning and Design Centre (MPDC) to make suggestions for their development and improvement. Technical assistance in preparation of state master plans for development of agricultural produce market is also given by the MPDC.

COTTON CLASSING SCHEME

A cotton classing centre was established at Surat in 1969-70 as a pilot project to provide facilities for grading of cotton lint to growers, cooperatives and others. With the success of the pioneer scheme, five more such centres have been established one each in Maharashtra (Nagpur), Karnataka (Raichur), Tamil Nadu (Tirupur), Madhya Pradesh (Khandwa) and Punjab (Abohar).

COLD STORAGE AND MEAT PRODUCTS

The Cold Storage Order, 1980 is enforced by the Directorate to develop the cold storage industry in a planned manner, to ensure hygienic and proper refrigeration conditions and to render technical guidance for scientific preservation of food-stuffs. As on 1 January 1989, 1,226 storages with the capacity of about 11.14 lakh cu mt were licensed under the Order. Besides, a large number of cold storages have been licensed by the state governments of Haryana, Punjab, Uttar Pradesh and West Bengal under their own Acts/Orders.

The Directorate also implements the Meat Food Products Order, 1973 throughout the country to ensure quality control of meat products for human consumption. Under the Order, 222 licenses were granted till March 1989.

The Directorate also conducted seven regular training courses for the benefit of the employees of the state government regulated market committees, cooperative societies and various commodity boards/corporations. During the year 1988-89, 148 personnel were trained in various disciplines of agricultural marketing. The producers and consumers are constantly exposed to the advantages of products marked Agmark, through various media, trade fairs and seminars. The Directorate also brings out a quarterly, *Agricultural Marketing*.

18 Food and Civil Supplies

THE management of India's food economy and monitoring of prices and availability of essential commodities are carried out by the Ministry of Food and Civil Supplies, through its two wings, Department of Food and Department of Civil Supplies.

The responsibility of the Department of Food in managing the food economy involves complex and large scale operations such as procurement of foodgrains, their timely movement to deficit regions, building-up and maintenance of buffer stocks and creation of adequate scientific storage capacity for holding them. Production, stock and price level have to be closely monitored, stock releases and imports have to be suitably timed and regulated to maintain adequate availability at reasonable prices.

The Department of Civil Supplies is responsible for monitoring the fluctuation of prices and availability of essential commodities, administration of Prevention of Blackmarketing and Maintenance of Supplies of Essential Commodities Act, 1980, public distribution system, protection, consumer cooperatives, integrated management of supply prices and distribution of *vanaspati,* oilseeds, vegetable oils, cakes and fats, control of future trading and matters relating to weights, measures and standards. The Department is assisted by Directorate of Weights and Measures; Directorate of Vanaspati, Vegetable Oils and Fat; Bureau of Indian Standards, New Delhi; Forward Markets Commission, Bombay and Hindustan Vegetable Oils Corporation Ltd., New Delhi.

FOOD

PRODUCTION

The production of foodgrains during 1985-86 to 1988-89 is given in table 18.1

TABLE 18.1 PRODUCTION OF FOODGRAINS

(Lakh tonnes)

Crop	1985-86	1986-87	1987-88	1988-89[1]
Rice	638.2	605.6	564.3	680
Wheat	470.5	443.2	451.0	510
Coarse Cereals	262.0	268.3	258.5	340
Pulses	133.6	117.1	110.4	135
Total	1,504.4	1,434.2	1,384.1	1,665

1. Likely achievement

PROCUREMENT OF FOODGRAINS

The procurement of foodgrains by the Government at the support prices ensures stability in farm prices. Table 18.2 gives an idea about the quantum of procurement of the main food crops, *viz.*, rice and wheat during the last three years.

TABLE 18.2 PROCUREMENT OF FOODGRAINS

(Lakh tonnes)

	1986-87	1987-88	1988-89 (January 1989)
Rice[1]	91.56	68.94	53.26
Wheat[2]	105.36	78.80	65.34

[1] Market season October-September

[2] Market season April-March

BUFFER STOCK

The building-up and maintenance of buffer stocks ensures stability in supplies and prices throughout the year. The Government has decided that the size of the buffer stocks to be maintained by the public agencies in the country should be 100 lakh tonnes—comprising 50 lakh tonnes of wheat and 50 lakh tonnes of rice. The buffer stock will be over and above the operational stock which on different dates of the year would range between the lowest figure of 65 lakh tonnes on 1 April and the highest figure of 114 lakh tonnes on 1 July of the year.

STOCK POSITION

As on 1 January 1989, the stocks of foodgrains with the public agencies stood at 0.95 crore tonnes (provisional) as against 1.41 crore tonnes on the same date last year. The level of stocks as on 1 January 1986 was the highest on this date in any year. The fall in the level of stocks was mainly due to higher demands and lower procurement.

DISTRIBUTION

The total distribution of foodgrains during 1988 (excluding open sale of wheat by the Food Corporation of India) was about 199.8 lakh tonnes.

DISTRIBUTION OF FOODGRAINS IN TRIBAL AREAS

Under this scheme, foodgrains are distributed to the people living in the areas covered by the Integrated Tribal Development Project (ITDP) at specially subsidised rates of Rs 1.55 per kg of wheat and Rs 1.85 per kg of common rice.

The scheme covers all the ITDP areas as well as tribal majority states/union territories of Nagaland, Meghalaya, Arunachal Pradesh, Mizoram, Lakshadweep, and Dadra and Nagar Haveli. The total population (as per 1981 census) covered by the ITDPs is 536 lakh and the tribal majority states—34 lakh, making the coverage of a total 570 lakh. Supplies of wheat and rice are made by the Food Corporation of India to various state governments/union territories at specially subsidised rates of Rs 1.39 per kg for wheat and Rs 1.64 per kg for common rice

IMPORT AND EXPORT OF FOODGRAINS

There has been an import of 20.09 lakh tonnes of wheat from USA and 6.84 lakh tonnes of rice from Thailand during 1988-89 to augment the buffer stocks.

Food Corporation of India (FCI) exported 0.204 lakh tonnes of wheat to Nepal and 0.712 lakh tonnes to Iran as commercial sale.

STORAGE

There are three agencies in the public sector which are engaged in building large-scale storage/warehouse capacity, namely, Food Corporation of India (FCI), Central Warehousing Corporation (CWC) and 16 state warehousing corporations (SWCs).

FCI is the main agency which provides storage facility for foodgrains. Besides constructing its own godowns, FCI hires storage capacity from other sources such as CWC, SWCs, state governments and private parties. The main functions of CWC and SWCs are to acquire and build warehouses at suitable places and operate them for storage of agricultural produce, fertilisers and certain other items. The cooperatives provide the storage facilities at the primary and marketing level. A scheme has also been initiated for establishing a national grid of rural godowns for agricultural produce in rural areas.

The covered storage capacity available with the FCI up to December 1988 was 180 lakh tonnes. The total covered storage capacity with the Central Warehousing Corporation till December 1987 was 61.32 lakh tonnes. The Corporation is also operating 152 customs-bonded warehouses with a total capacity of about 7.9 lakh tonnes as on 31 December 1988. The CWC operates the air cargo complexes at Amritsar and Goa and a Container Freight Station at Patparganj, Delhi. The CWC has 16 associates in the state warehousing corporations. The total storage capacity available with the state warehousing corporations, both owned and hired taken together, was 84.74 lakh tonnes as on 31 December 1988 (provisional).

QUALITY CONTROL

Storage and Research Division is responsible for formulation of uniform specifications for procurement of foodgrains all over the country and also to deal with policy matters in respect of technical aspects for import and export of foodgrains. It also renders advice to Food Corporation of India, state governments and other agencies connected with the storage of foodgrains in respect of preservation and quality aspect. For this purpose, the Central Grain Analysis Laboratory undertakes analysis of foodgrains and their products. Three quality control cells are functioning at New Delhi, Calcutta and Hyderabad to monitor the quality of foodgrains during procurement, storage and distribution.

SAVE GRAIN CAMPAIGN

The Save Grain Campaign, which was launched as a pilot project in 1965-66 and became a regular scheme since 1969-70, seeks to popularise scientific methods of foodgrains storage at the farm level. The scheme aims at providing appropriate technology through education, motivation and persuasion in preventing losses and improving the farm and community level storage. Simple but effective methods of foodgrains storage and pest control are being popularised. Improved types of metal bins and pesticides are supplied. The main idea is to enable the farmers to minimise storage losses.

The activities of the 'save grain campaign' are being undertaken by a network of 17 regional teams of technical staff. They are supported by the Indian Grain Storage Institute, Hapur and its field stations at Hyderabad, Ludhiana, Jabalpur, Jorhat and Udaipur.

NUTRITION

The programmes of the Nutrition Division of the Department of Food are concerned with development, production and promotion of nutritious foods particularly for meeting the requirements of the supplementary feeding programmes and training and education in nutrition to functionaries and beneficiaries.

Nutrition education has been one of the important activities of the Department of Food for more than two decades. The Government has set up a fleet of 34 mobile food and nutrition extension units in different parts of the country. These units disseminate knowledge on various aspects of food and nutrition, such as improving diet at low cost, conservation of nutrients during food preparation, principles of food hygiene, personal hygiene and environmental sanitation and promotion of suitable dietary habits. The information is imparted to the community through demonstration programmes supported by film and slide-shows, exhibition, etc. These units are also conducting demonstration programmes in tribal areas for promotion of consumption of wheat.

The Department also has 33 food and nutrition extension centres (earlier known as community canning and preservation centres) in different parts of the country for imparting education and training in home-scale preservation of fruits and vegetables mainly to housewives and conducting nutrition education programme in the field.

The Department has initiated nutrition education activities by way of imparting education on both food and non-food factors to the community through the field level functionaries of the concerned departments of the Government. Training of different level functionaries and the development of educational/training material are the two important components of the new scheme of integrated nutrition education.

The Department of Food also brings out publicity material such as folders, posters, art-cards, receipe booklets, etc., in different languages for the use of community at large. It also undertakes preparation of short films on nutrition. A national Nutrition Week is celebrated since 1982 to create an awareness among the people about the importance of nutrition.

FOOD PROCESSING

Department of Food administers the Fruit Products Order, 1955 issued under the Essential Commodities Act, 1955. The order provides for quality control on production and marketing of fruit and vegetable products by laying down statutory minimum hygienic and sanitary requirements for production. It also stipulates standards on quality, composition, permitted food colours, preservatives and other activities. Labelling and marketing requirements designed to protect the interest of the consumer have also been prescribed under the order.

It is also the regulating agency under the Export (Quality Control and Inspection) Act, 1963 which regulates the export of fruit and vegetable products. Consignments of fruit products meant for export are subjected to pre-shipment inspection to ensure that the products conform to the specifications laid down in the Fruit Products Order of the buyer's specifications as the case may be. In the case of fruit juices and pulps, in-plant inspection is also carried out to ensure quality production for their export.

The organisational set-up consists of Directorate of Fruit and Vegetable Preservation with four regional offices at Bombay, Calcutta, Delhi and Madras. The Department has four laboratories located at Bombay, Delhi, Calcutta and Madras for maintenance of quality control of fruit and vegetable products.

Bihar Fruit and Vegetable Development Corporation Ltd., an undertaking of the Bihar Government, has set up a fruit and vegetable processing plant at Hajipur in Vaishali district at a capital cost of Rs 193.68 lakh. The Department of Food has financial participation in the project by way of equity of Rs 49 lakh and a long-term loan of Rs 70 lakh.

Modern Food Industries (India) Ltd. (MFIL) with its bakery units in 13 important cities provides to the consumers hygienically prepared bread fortified with vitamins and minerals. The Company participates in Government programmes to combat malnutrition by supplying special nutritious bread and ready-to-eat extruded food to nutrition programmes of the state governments. The Company's fruit juice bottling plant produces apple, mango, guava and pineapple juice drinks under the brand name *Rasika*.

North-Eastern Regional Agricultural Marketing Corporation Ltd. (NERAMAC) which was incorporated as a government company in March 1982 with headquarters at Guwahati, has been providing a marketing outlet for the horticultural products of the north-eastern region. The Corporation's first major project, *viz.*, fruit juice concentrate plant set up in north Tripura was commissioned during June 1988. It will process pineapple which is grown abundantly in the area and produce pineapple juice concentrate.

RICE MILLING INDUSTRY

Under modernisation of rice milling industry, a scheme for modernisation of hullers is being implemented in Andhra Pradesh, Tamil Nadu, Uttar Pradesh, West Bengal, Orissa and Maharashtra. The scheme provides for Rs 5,000 subsidy each to 450 huller owners to enable them to instal modern equipment for milling of paddy, setting up of demonstration units and holding seminars on the subject. Three rice mill machinery testing centres, one each in southern, eastern and northern regions have been established to ensure proper quality control of the modern equipment. Nine rice milling extension service centres are set up one each in Andhra Pradesh, Karnataka, Maharashtra, Madhya Pradesh, Orissa, Tamil Nadu, West Bengal and two in Uttar Pradesh to spread the message and advantages of modernisation. The Post-Harvest Technology Centre, Indian Institute of Technology, Kharagpur and Paddy Processing Research Centre, Thiruvarur in Tamil Nadu are engaged in research and development in the applied aspects of paddy processing and by-products utilisation.

CIVIL SUPPLIES

PRICE MANAGEMENT

WHOLE SALE PRICE INDEX

During April-December 1988, the all-commodities wholesale price index (WPI) moved up by four per cent as against an increase of 8.5 per cent in the same period in 1987. During the current financial year the wholesale price index data stood at 434.4 ending December 1988. The annual rate of inflation as measured in terms of WPI was 5.8 per cent in December 1988.

CONSUMER PRICE INDEX

The consumer price index (CPI) for industrial workers moved up by 10 per cent during April-November 1988 compared to an increase of 10.1 per cent during the same period in 1987. The latest CPI stood at 818 ending December 1988 from 752 ending December 1987. In the first quarter (April-June) of the current financial year, the CPI has moved by 3.9 per cent as against an increase of 4.2 per cent in the same three months last year. The annual rate of inflation in December 1988 was 5.8 per cent, while in the same month in 1987 it was 8.6 per cent.

COMMODITYWISE PRICE TREND

Although the prices of cereals have continued to be under pressure, it is likely that due to bountiful rainfall so far, there will be substantial increase in the production of cereals and pulses. Consequently, their availability will improve and open market prices will tend to move down. As a result of higher production and better supply management of sugar, prices of non-levy sugar have remained more or less steady during the past two years or so. However, in the recent times the prices did show an upward trend. With larger release of non-levy sugar, not only the rising trend has been stalled, but of late there has been some decline in its prices also. The prices of edible oils this year have generally been subdued. In the past 19 weeks ending 6 August 1988, the wholesale price index of edible oils has remained more or less steady while in the same period last year the WPI of edible oils had moved up by 29 per cent. The wholesale price index of edible oils in the week ending 6 August 1988 was lower by 14.4 per cent over the same week a year ago.

PUBLIC DISTRIBUTION SYSTEM

The public distribution system is an important measure to tackle the inflationary trend, *i.e.*, to keep the price under check, reduce fluctuations in prices and ensure supply of key essential commodities at reasonable prices, particularly to the weaker and the vulnerable sections of the society. The number of fair price shops has increased from about 2.39 lakh in March 1979 to about 3.5 lakh in September 1988. About 79 per cent shops are in the rural areas out of which 28 per cent are being operated by cooperatives.

The responsibility for procuring and supplying seven key essential commodities, *viz.*, rice, wheat, sugar, imported edible oils, kerosene, soft coke and controlled cloth to states/UTs is with the Central government. The Central government agencies, such as, Food Corporation of India, State Trading Corporation of India, National Cooperative Consumers Federation, Coal India Ltd. and the various public sector oil companies are entrusted with the task of supplying these commodities at Central issue prices.

Besides these seven items, the state governments/union territory administrations are free to include in their public distribution system other commodities for which they can arrange procurement on their own with a view to making more commodities of mass consumption available to consumers and at the same time improving the economic viability of fair price shops. Some state governments like West Bengal, Tamil Nadu, etc., have included pulses, match boxes, toilet soaps, cycle tyres and tubes, exercise books, torch cells, etc., for supply to consumers through fair price shops.

The organisation and administration of public distribution system in their respective territories is primarily the responsibility of the concerned state governments and UT administrations. The working of PDS is periodically reviewed in consultation with state governments and corrective measures taken from time to time. To improve supply of essential commodities, the Central government monitors the availability/shortage in states/UTs on a weekly and monthly basis, through consistent follow-up with them. At the Centre, an Advisory Council on PDS is functioning to review its working from time to time. In states/UTs, consumer advisory committees at district, block and *taluka* levels are functioning to oversee the working of fair price shops.

The public distribution system has also been made one of the components of the Minimum Needs Programme and guidelines have been issued to all the states/UTs for implementing the PDS as part of it.

So far, 12 states and one union territory have set up civil supplies corporations which are looking after the work of procurement, warehousing and supply of a number of essential commodities under the PDS. For strengthening the infrastructural facilities for the PDS in the north-eastern states including Sikkim and states of Himachal Pradesh and Jammu and Kashmir and the Union Territory of the Andaman and Nicobar Islands, the Centre provides financial assistance for strengthening/setting up of civil supplies corporations and construction of godowns.

Control rooms are also being set up in states/union territories to monitor the prices and availability of essential commodities. It also ensures that essential commodities supplied through PDS actually reach the consumers for whom they are meant. Intensive anti-hoarding drives are conducted to curb the activities of hoarders, black-marketeers and other anti-social elements in trade and industry.

EDIBLE OILS ECONOMY

Since oils and fats have significant nutritional value in a balanced diet, they are considered essential food items. The Department of Civil Supplies is responsible for the integrated management of the supply, price and distribution of vanaspati, vegetable oils and fats. Since the production of edible oilseeds in the country has not increased rapidly to meet the demand of oils, the Government has been importing edible oils to bridge the gap between demand and supply. The overall objectives of the Government are to ensure that an appropriate quantity of edible oils is made available at a reasonable price to consumers, particularly the weaker sections of the society and that the interests of the producers of the oilseeds in the country are safeguarded so that self-sufficiency in edible oils is achieved in the near future.

VANASPATI INDUSTRY

Vanaspati industry which came into existence in 1930 with a nominal production, has made rapid strides. The production of vanaspati in 1988 (up to October) was 8.20 lakh tonnes. The licensed capacity of the industry is about 17.44 lakh tonnes pertaining to 102 units. Part of this capacity is also utilised for the manufacture of margarine, bakery shortening and refined oils for direct consumption and industrial hard oils for soap making.

OILS

During 1988, nine industrial licenses/letters of intent with a total capacity of around 2.85 lakh tonnes in terms of oilseeds have been issued under the Industries (Development and Regulation) Act, 1951. The Government has permitted manufacturing and marketing of blended soyabean oil (refined) and groundnut oil with the aim to optimise overall utilisation of non-traditional oils along with traditional ones.

Solvent Extracted Oil, De-Oiled Meal and Edible Flour (Control) Order, 1967 was promulgated in March 1967 under the Essential Commodities Act, 1955. About 691 solvent extraction plants have been licensed up to October 1988. The production of solvent extracted oils has increased from three lakh tonnes in the year 1981-82 to about 4.13 lakh tonnes by 1988 (up to September). With the objective of augmenting production of solvent extracted oils, the Government has provided certain fiscal incentives.

HINDUSTAN VEGETABLE OILS CORPORATION LTD.

With the nationalisation of the Ganesh Flour Mills and the Amritsar Oil Works, under the Industries (Development and Regulation) Act, a new Government company, namely, the Hindustan Vegetable Oils Corporation (HVOC) was registered on 30 March 1984. The two nationalised units were also vested in the Government company. Now the Corporation is having ten units spread all over the country. HVOC is mainly engaged in the production of vanaspati, refining and packing of imported edible oils in small consumer packs, etc. One of its units is engaged in the production of breakfast food items like oats and cornflakes. It also manufactures ready-to-eat snacks for child welfare programmes.

The Corporation had a turnover of Rs 373 crore during 1987-88 as compared to Rs 282 crore in 1986-87. It earned a net profit of Rs 26.77 crore during 1987-88 as compared to Rs 14.73 crore in 1986-87.

CONSUMER COOPERATIVES

Consumer cooperatives constitute an important organised structure in the distributive trade. They play a vital role in making available essential and other consumer goods at reasonable prices to the common man by adopting fair trade practices. In order to ensure that the consumer cooperatives stay as a permanent and distinct feature in the distribution system, programmes for development of consumer cooperatives have been introduced in a planned manner. Consumer cooperatives are promoted and strengthened to support public distribution system and to support a strong consumer protection movement, both in urban and rural areas.

The infrastructure of consumer cooperatives consists of 22,035 primary consumer cooperative stores, 660 Central wholesale consumer societies at the district level, 26 state level consumer federations, state marketing-1cum-consumer federations and a National Consumers' Cooperative Federation at the apex level.

These cooperatives have 32,500 retail outlets in the urban areas. In the rural areas, about half of 55,000 primary agricultural credit societies are actively involved in distribution of consumer goods.

In the urban areas, consumer cooperatives have attained the retail sales of Rs 2,300 crore during 1987-88 as against Rs 1,750 crore during 1986-87. The value of consumer articles distributed by primary agriculture credit societies in rural areas amounted to Rs 2,075 crore during 1987-88 as against Rs 1,875 crore in 1986-87.

At the national level, National Cooperative Consumers' Federation was set up in 1965 with the objective of providing supply support and to provide promotional and technical guidance/assistance to the consumer cooperative movement. As on 30 June 1988, the total members of NCCF stood at 105 comprising 21 state federations, 80 wholesale/primary stores and two national federations. The paid-up share capital of the Federation was Rs 5.5 crore as on 30 June 1988 of which Government contribution is Rs 2.83 crore. NCCF has four regional offices besides 22 branches all over the country and five processing manufacturing units.

The NCCF has set up a consultancy and promotional cell with the financial assistance from Government of India. Specialists and professionals in the field of consumer cooperatives provide management services to the consumer cooperatives in the country to increase their economic trading and operational and organisational efficiency.

Urban areas of the country have by and large been covered by the consumer cooperatives. Large departmental stores where one can have complete shopping under one roof generally known as *Super Bazar, Apna Bazar, Sahakar Bazar, Janata Bazar,* etc., have been established in large cities and towns.

Financial assistance is provided to the state governments to supplement their resources for development of consumer cooperatives. Funds are provided for opening retail outlets, to cater to the needs of the people living in the outskirts of big metropolitan cities, setting up of regional distribution centres (RDCs) to provide supply support to the cooperatives in selected areas, setting up of consumer industries, strengthening of state consumer federations and rehabilitation of sick/weak consumer cooperative stores and state federations in north-eastern states.

During the Seventh Plan period, a sum of Rs 19.50 crore has been provided for the scheme. In 1987-88, Rs 1.17 crore was provided for setting up five departmental stores, 46 small/large retail outlets, one mobile van shop, one consumer industry and rehabilitation of three wholesale stores. Besides, two wholesale stores were assisted for modernisation and construction of business premises.

Super Bazar, the Cooperative Store Ltd., New Delhi established in 1966, is one of the biggest consumer cooperative institutions in the country. It is running the largest chain of 120 retail outlets including three big departmental stores and 17 drug stores of which three outlets provide round-the-clock service. In addition, it is running 63 mobile van shops, including 11 fruit and vegetable vans and five village specials which cover about 187 points in different parts of the city. All food items sold through the Super Bazar are tested in its laboratory before they are put on for sale. As on 30 June 1988, it had a total membership of 24,152 and a total paid-up share capital of Rs 118.70 lakh, of which the Government contribution was Rs 103.13 lakh. The sales turnover of Super Bazar has increased from Rs 65.12 crore during 1985-86 to Rs 87.50 crore during 1987-88.

The Government is providing financial assistance by way of margin money to primary agriculture cooperative societies (PACS) and large sized multi-purpose societies (LAMPS) to undertake distribution of consumer articles in rural areas. The scheme is being implemented through the National Cooperative Development Corporation (NCDC). During the Seventh Plan, an outlay of Rs 24.50 crore has been provided for the purpose. About 10 per cent of the allocation is earmarked for tribal areas. The total financial assistance sanctioned by the NCDC under the Central sector scheme was of the order of Rs 2.40 crore during 1987-88.

CONSUMER PROTECTION

The Government accords high priority to consumer protection. The Department of Civil Supplies, as a nodal department in the matters relating to consumer affairs, has initiated a number of measures to promote a broad-based and responsive consumer movement throughout the country. These measures include the use of mass media for education and information of consumers, involvement of increasing number of consumer organisations in taking up the cause of the consumers and coordinating the measures taken by the states and union territories and ministries as well as departments concerned with the interest of the consumers.

CONSUMER PROTECTION LEGISLATIONS

In December 1986, seven major consumer protection legislations namely, the Essential Commodities Act, 1955, the Prevention of Food Adulteration Act, 1954; the Drug and Cosmetics Act, 1940; the MRTP Act, 1969; the Agriculture Produce (Grading and Marking) Act, 1975; the Standards of Weights and Measures Act, 1975, and the Standards of Weights and Measures (Enforcement) Act, 1980, were amended to empower consumers and registered consumer organisations to file complaints in the court, which hitherto were vested with Government officials only.

THE CONSUMER PROTECTION ACT, 1986

The Government has enacted a comprehensive consumer protection legislation namely, the Consumer Protection Act, 1986 to provide better protection to the interests of consumers. All the provisions of this Act have come into force in July 1987. The Act applies to all goods and services unless specifically exempted by the Central government. It covers public, private, joint and cooperative sectors. The Act provides for setting up consumer protection councils in the Centre and the states, whose main object will be to promote and protect the rights of consumers. It enshrines the rights of consumers such as right to safety, right to be informed, right to consumer education, etc. The Act also provides for setting up of three-tier quasi-judicial machinery at district, state and national level to provide speedy and inexpensive redressal to consumers' grievances. The Consumer Disputes Redressal Forum (district forum) will consist of three members including a person who qualifies to be a district judge as its president. It will have jurisdiction to entertain complaints where the value of goods or services and the compensation, if any, claimed is less than rupees one lakh. The Consumer Disputes Redressal Commission (state commission) will consist of three members including a person who is or has been judge of a high court as its president. It will have jurisdiction to entertain complaints where the value of goods or services and the compensation, if any, claimed is more than rupees one lakh but less then Rs 10 lakh. The National Consumer Disputes Redressal Commission (national commission) will consist of five members including a person who is or has been a judge of the Supreme Court as its president. It will entertain complaints where the value of goods or services and compensation, if any, claimed exceeds Rs 10 lakh. The national commission and state commissions will have appellate and revisionary jurisdiction also.

The Central government had constituted the Central Consumer Protection Council in June 1987. So far 22 states/union territories, namely, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Gujarat, Madhya Pradesh, Maharashtra, Mizoram, Nagaland, Orissa, Rajasthan, Sikkim, Tamil Nadu, Uttar Pradesh, West Bengal, Goa, the Andaman and Nicobar Islands, Delhi, Lakshadweep, Pondicherry, Chandigarh and Dadra and Nagar Haveli have constituted state level consumer protection councils.

STANDARDISATION AND QUALITY CONTROL

Bureau of Indian Standards Act was enacted in December 1986 for the harmonious development of the activities of standardisation, marking and quality certification. The Act has been enforced from 1 April 1987 and the Bureau of Indian Standards (BIS) became functional from that date taking over the staff, functions, assets and liabilities of the Indian Standards Institution. The Bureau has the active assistance of around 37,000 technical experts as its committee members drawn from all over the country, representing industries, educational and research institutions, testing laboratories, Government representatives, consumer organisations, etc. The task of formulating standards is organised through 11 technical divisions of the BIS.

A large number of public and private laboratories in the country are being used in the testing of samples. BIS has also established its own network of testing laboratories at Sahibabad (near Delhi), Bombay, Calcutta, Madras, Mohali (near Chandigarh), Guwahati and Patna. It also interacts with public sector units in various sectors, including mining, petroluem and refineries in the matter of standardisation and quality system. About 80 public sector units have been made nodal points for interaction with the BIS.

In order to give thrust to standardisation, certification, product testing and quality improvement activities, state level committees are being set up. So far Andhra Pradesh, Assam, Bihar, Delhi, Gujarat, Karnataka, Maharashtra, Meghalaya, Tamil Nadu, Uttar Pradesh and West Bengal have set up such committees.

In the area of certification, 852 new licenses were granted in 1988 (April-October) and the number of licenses in operation as on 31 March 1988 was 10,118. More items have been brought under the purview of mandatory certification of the Bureau.

BIS, at the international level, has established close liaison with standards bodies of various countries and is also closely associated with international standards organisations like the International Organisation for Standardisation and International Electro-Technical Commission, for both technical work and policy planning.

STANDARDS OF WEIGHTS AND MEASURES

Uniform standards of weights and measures based on the metric system were established in the country by a Parliamentary Act, the Standards of Weights and Measures Act, 1956. The standards established by the 1956 Act were enforced in accordance with the provisions of the laws adopted by the states for the purpose. The states also created suitable machinery for enforcement of the laws. The Weights and Measures Unit in the Department of Civil Supplies is the nodal agency for all the activities relating to the subject.

In order to establish the international system of units and to align our laws with the international practices as well as to remove certain deficiencies, a comprehensive legislation, namely, the Standards of Weights and Measures Act, 1976 was enacted by Parliament which replaced the 1956 Act. The 1976 Act contains, among other things, provisions for the regulation of pre-packaged commodities. These provisions are intended to establish fair trading and price discipline in respect of commodities sold to the consumers in packaged form. The provisions of the Act relating to packaged commodities and the relevant rules, namely, the Standards of Weights and Measures (Packaged Commodities) Rules, 1977, have been in force since September 1977. According to these provisions, every package intended for retail sale is required to carry the information as regards the name of the commodity, name and address of the manufacturer/packer, net contents, the month and year of manufacturing/packing and the sale price. Mandatory declaration of the sale price on the package and prohibiting the retail dealer from charging more than the declared price, protects the consumers against arbitrary charging of prices.

In order to ensure uniformity in the matter of enforcement, the Standards of

Weights and Measures (Enforcement) Act, 1985 was passed by the Parliament. The Act, which is to replace the existing Weights and Measures (Enforcement) Acts of the states, contains provisions for effective legal control on weights, measures and weighing/measuring instruments used in commercial transactions, industrial production and protection of public health and human safety. To expedite the operation of the 1985 Act, model draft enforcement rules were circulated to the states and union territories. In some of the states, the rules have been notified for enforcement.

There is an agreement between the Government of India and the Government of Federal Republic of Germany (FRG) for developing and modernising the weights and measures system in the country. Under the agreement, FRG is to provide equipment, advanced training and expert services for the promotion of the weights and measures system.

INDIAN INSTITUTE OF LEGAL METROLOGY

Indian Institute of Legal Metrology, Ranchi, working under the administrative control of the Department of Civil Supplies, imparts training in legal metrology and other allied subjects. The training facilities have been strengthened in collaboration with the Government of FRG with the object to provide effective in-service training to the personnel responsible for enforcing the weights and measures laws.

LABORATORY FACILITIES AND PRODUCTION OF STANDARDS

Three regional reference standards laboratories were set up at Ahmadabad, Bhubaneshwar and Bangalore to provide facilities to the state enforcement organisations as well as to the industry in the regions. Facilities in these laboratories have been developed with the ultimate object to improving the quality of measurement in the industries and to protect the interest of consumers in the matter of quantity.

National Physical Laboratory, New Delhi is responsible for realisation, establishment, custody, maintenance and updating of the national standards of weights and measures. The Government of India Mint, Bombay undertakes manufacture of reference, secondary and working standards and caters to the needs for standards not only of the various states and union territories but also of several other countries in the region.

FORWARD CONTRACTS

Forward Market Commission, set up under the Forward Contracts (Regulation) Act, 1952, is a statutory organisation responsible for administration and enforcement of this Act. It regulates forward-trading in various commodities to which the regulatory provisions of this Act have been applied through associations recognised at selected centres for such trading; takes action to curb unhealthy speculation in such regulated forward-markets, and keeps a watch over the price trends of a number of commodities. It assists the state governments and union territory administrations in enforcement of the Government's policy regarding prohibition or suspension of forward-trading in any commodity. The Commission has its head office at Bombay with a branch office at Calcutta.

The commodities in which future-trading, transferable specific delivery (TSD)/non-transferable specific delivery (NTSD) contracts permitted by the Government, subject to regulation are: (a) future-trading: (i) pepper, (ii) turmeric, (iii) *gur,* (iv) castorseed, and (v) potatoes; (b) NTSD contracts: (i) cotton; (c) TSD and NTSD contracts: (i) jute and jute goods.

The enforcement of the penal provisions of the Act so as to check illegal forward-trading, is the responsibility of the state governments. The role of the Commission in this respect is advisory in nature, extending to communicating information about such trading to the concerned police authorities, scrutinising documents seized by them and giving expert advice. The Commission also conducts training programmes and seminars for familiarising police/prosecuting officers, magistrates, civil supplies officers, etc., in the technicalities of offences under this Act.

TRADE MARKS

Trade and Merchandise Marks Act, 1958 provides for the registration and better protection of trade marks and for the prevention of the use of fraudulent marks on merchandise. The Trade Marks Registry is the statutory organisation set up for the administration of the Act. It works under the Controller General of Patents, Designs and Trade Marks, who is the Registrar of Trade Marks for the purpose of the said Act. The Registry has its head office at Bombay with branch offices at Calcutta, Delhi and Madras.

19 Energy

ENERGY is an essential input for economic development and for improving the quality of life. India's per capita consumption of commercial energy (*viz.*, coal, petroleum and electricity) is only one-eighth of the world average and will increase with the growth in Gross Domestic Production (GDP) and improvement in the standard of living of the people.

Commercial energy accounts for a little over half of the total energy used in the country, the rest coming from non-commercial resources, like cowdung, fuel-wood and agricultural waste. Though the share of these non-commercial sources has been coming down, consumption has increased almost double since 1953 up to 1980. These renewable, non-commercial sources have been used extensively for hundreds of years, but in a primitive and inefficient way. The indiscriminate use of non-commercial energy sources is leading to an energy crisis in rural areas. The latest Five Year Plan lays emphasis on the development and accelerated utilisation of renewable energy sources in rural and urban areas. A major policy of the Government is directed towards increasing the use of coal in household and of electricity in transport sector in order to reduce dependence on oil, which is becoming scarce gradually.

The Government of India has formulated an Energy Policy with the objectives of ensuring adequate energy supply at minimum cost, of achieving self-sufficiency in energy supplies and protecting the environment from the adverse impact of utilising energy resources in an injudicious manner. The main elements of Energy Policy are: (i) accelerated exploitation of domestic conventional energy resources—oil, coal, hydro and nuclear power; (ii) intensification of exploration to increase indigenous production of oil and gas; (iii) management of demand for oil and other forms of energy; (iv) energy conservation and management; (v) optimisation of the utilisation of existing capacity in the country; (vi) development and exploitation of renewable sources of energy to meet the energy requirements of rural communities; (vii) intensification of research and development activities in the field of new and renewable energy sources, and (viii) organisation of training for the personnel engaged at various levels in the energy sector.

The development of conventional forms of energy for meeting the growing energy needs of society at a reasonable cost is the responsibility of three separate Departments/Ministries of the Government *viz.*, Departments of Power and Coal and the Ministry of Petroleum and Natural Gas. The development and promotion of non-conventional/alternate/new and renewable sources of energy such as solar, wind and bio-energy, etc., are also getting sustained attention from the Department of Non-Conventional Energy Sources, created in September 1982. Nuclear energy development is being geared-up by the Department of Atomic Energy to contribute significantly to the overall energy availability in the country.

POWER

Electricity is the most convenient and versatile form of energy. The demand for it, therefore, has been growing at a rate faster than other forms of energy. The power industry too has recorded a phenomenal rate of growth both in terms of its volume and technological sophistication over the last few decades. Electricity plays a crucial role in both industrial and agricultural sectors, and therefore, the consumption of electricity in the country is an indicator of productivity and growth. In view of this, power development has been given high priority in the development programme.

Although power development was initiated in India as early as 1900 with the commissioning of the hydro-electric power stations at Shivasamudram in Karnataka, the progress was not impressive till 1947. The installed capacity was as low as 19 lakh kw and activity was mainly concentrated around urban areas. Power generation programmes, however, made phenomenal progress with the advent of Five Year Plans. The power sector is highly capital intensive and investment in this sector constitutes a substantial share of the total Plan outlay in the country.

DEVELOPMENT UNDER PLANS

During the First Plan, construction of a number of major river valley projects like Bhakra-Nangal, Damodar Valley, Hirakud and Chambal Valley was taken up. These projects resulted in the stepping up of power generation. At the end of First Plan, the generation capacity stood at 34.2 lakh kw.

The emphasis in the Second Plan was on the development of basic and heavy industries, and the related need to step up power generation. The installed capacity at the end of the Second Plan reached 57 lakh kw.

During the Third Plan, the emphasis was on extending power supply to rural areas. A significant development in this phase was the emergence of inter-state grid system. The country was divided into five regions to promote power development on a regional basis. A regional electricity board was established in each region to promote integrated operation of the constituent power system.

The three Annual Plans that followed the Third Plan aimed at consolidating the programmes initiated during the Third Plan.

The Fourth Plan envisaged the need for Central participation in expansion of power generation programmes at strategic locations to supplement the activities in the state sector.

The progress during the period covering the Third Plan, the three Annual Plans and the Fourth Plan was substantial with installed capacity rising to 313.07 lakh kw comprising 113.86 lakh kw from hydro-electric projects, 192.81 lakh kw from thermal power projects and the balance of 6.4 lakh kw from nuclear projects, at the end of Fifth Plan.

During the Sixth Plan, a total capacity addition of 196.66 lakh kw comprising hydro 47.68 lakh kw, thermal 142.08 lakh kw and nuclear 6.90 lakh kw was planned. The achievement, however, has been 142.26 lakh kw (28.73 lakh kw hydro, 108.98 lakh kw thermal and 4.55 lakh kw nuclear) *i.e.*, 72.3 per cent of the target.

CAPACITY ADDITIONS DURING SEVENTH PLAN PERIOD

The Seventh Plan power programme envisages aggergate generating capacity of 22,245 mw in utilities. This comprises 15,999 mw thermal, 5,541 mw hydro and 705 mw nuclear. Out of the anticipated 22,245 mw additional capacity, Central sector programme envisages a capacity addition of 9,320 mw (7,950 mw thermal, 665 mw hydro and 705 mw nuclear) during the Plan period. During the first three years of the Seventh Plan, 11,828.94 mw have been added comprising 8,809.1 mw thermal, 2,784.84 mw hydro and 235 mw nuclear. The yearwise commissioning of hydro, thermal and nuclear capacity which has been added during 1985-86 to 1988-89 is given in table 19.1.

TABLE 19.1 ADDITION TO POWER GENERATION CAPACITY

(Megawatts)

	Thermal	Hydro	Nuclear	Total
1985-86	2,977	1,011	235	4,223
1986-87	1,920	704.5	—	2,624.5
1987-88	3,912.1	1,069.34	-	4,981.44
1988-89	3,324.5	937.0	235.0	4,496 5

POWER GENERATION

The target of power generation during 1988-89 was 20,059 crore units, of this 14,205.8 crore units were programmed for generation by thermal stations, 554.8 crore units by nuclear plants and 5,297.9 crore units by hydro stations.

ORGANISATION

The subject 'Power' appears in the Concurrent List of the Constitution and as such the responsibility of its development lies both with the Central and state governments. At the Centre, the Department of Power under the Ministry of Energy is responsible for the development of electric energy. The Department is concerned with policy formulation, perspective planning, procuring of projects for investment decisions, monitoring of projects, training and manpower development, administration and enactment of legislation in regard to power generation, transmission and distribution. The Department is also responsible for the administration of the Electricity (Supply) Act, 1948 and the Indian Electricity Act, 1910, and undertakes all amendments thereto. The Electricity (Supply) Act, 1948 forms the basis of the administrative structure of the electricity industry. The Act provides for the setting up of a Central Electricity

Authority (CEA) with responsibility, *inter-alia* to develop a national power policy and to coordinate the activities of various agencies and state electricity boards. The Act was amended in 1976 to enlarge the scope and function of the CEA and to enable the creation of companies for generation of electricity.

Central Electricity Authority advises the Department of Power on technical, financial and economic matters. The construction and operation of generation and transmission projects in the Central sector are entrusted to the Central power corporations, namely, the National Thermal Power Corporation (NTPC), the National Hydro-Electric Power Corporation (NHPC) and the North-Eastern Electric Power Corporation (NEEPCO), under the administrative control of the Department of Power. The Damodar Valley Corporation (DVC) constituted under the DVC Act, 1948 and the Bhakra-Beas Management Board (BBMB) constituted under the Punjab Reorganisation Act, 1966, are also under the administrative control of the Department of Power. In addition, the Department administers the Beas Construction Board (BCB) and the National Projects Construction Corporation (NPCC) which are construction agencies and the training and research organisations, the Central Power Research Institute (CPRI) and the Power Engineers Training Society (PETS). Programmes of rural electrification are within the purview of the Rural Electrification Corporation (REC), which is a financing agency.

NATIONAL AND REGIONAL POWER GRID

Significant progress has been made in the expansion of transmission and distribution facilities in the country. The total length of transmission lines of 66 kv and above increased from 10,000 ckt (circuit) km in December 1950 to 1.80 lakh ckt km in March 1988. The highest transmission voltage in the country at present is 400 kv and about 14,000 ckt km of 400 kv lines have been constructed up to March 1988 and about 13,000 ckt km of these are in actual operation.

Prior to the Fourth Plan, transmission systems in the country were developed more or less as state systems, as the generating stations were built primarily in the state sector. When the state transmission systems had developed to a reasonable extent in the Third Plan, the potentiality of inter-connected operation of individual state systems with other neighbouring systems within the regions (northern, western, southern, eastern and north-eastern) was thought of. Fairly well inter-connected systems at voltage of 220 kv with progressive over lay of 400 kv are presently available in all the regions of the country except the north-eastern region. With the creation of two generation corporations, namely, National Thermal Power Corporation and National Hydro-Electric Power Corporation in 1975, the Centre has started playing an increasingly larger role in the development of the grid systems.

The 400 kv transmission systems being constructed by these organisations as part of their generation projects, along with the 400 kv inter-state and inter-regional transmission lines would form part of the national power grid. The national power grid will promote integrated operation and transfer of power from one system to another with the ultimate objective of ensuring optimum utilisation of resources in the country.

REGIONAL ELECTRICITY BOARDS

In order to promote integrated operation of the power systems, the country has been divided into five regions, namely, north, west, south, east and north-east. Regional electricity boards were set up in 1964 in each of these regions. The northern region covers Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Rajasthan, Uttar Pradesh, Chandigarh and Delhi; western region covers Gujarat, Madhya Pradesh, Maharashtra, Goa, Daman and Diu and Dadra and Nagar Haveli; southern region covers Andhra Pradesh, Karnataka, Kerala, Tamil Nadu and Pondicherry; eastern region covers Bihar, Orissa, West Bengal and Sikkim, and north-eastern region covers Assam, Manipur, Meghalaya, Nagaland, Tripura, Arunachal Pradesh and Mizoram.

REGIONAL LOAD DESPATCH CENTRES

In order to coordinate the operation of the regional grids of the constituent power systems and to optimise utilisation of the existing generation capacity, Regional Load Despatch Centres (RLDCs) have been set up in each region which function under the regional electricity boards. The Central Electricity Authority extends overall supervision over the RLDCs.

By the end of the Fifth Plan, necessary action was taken to establish permanent RLDCs in the northern, western and eastern regions with facilities like on-line computers for data acquisition and processing, telemetry, system diagram boards, etc. The permanent RLDCs have been commissioned during 1984 in the western and northern regions and in 1986 in the eastern region and are monitoring the operation of the power systems in these regions. The RLDC in the southern region is functioning with system diagram board, PLCC speech links, telemetry, teleprinting, load frequency control systems, etc. In the north-western region, an interim Local Despatch Centre is operating.

STATE ELECTRICITY BOARDS

State electricity boards have been established in 18 out of 25 states. These are mainly responsible for generation and distribution of electricity in their respective states. Arunachal Pradesh, Goa, Manipur, Mizoram, Nagaland, Sikkim and Tripura are yet to establish their electricity boards.

TELECOMMUNICATION FOR POWER SECTOR

The efficient operation of integrated power systems through modernised computer-based load despatch centres is vitally dependent on efficient data transfer over long distances. This has established the need for developing a highly reliable communication system dedicated to the power sector delinked from the public communication network. Subsequent to an indepth analysis of the requirements carried out by the Planning Commission in association with the power sector and various communication agencies, the Central Electricity Authority is now in the process of appointing consultants for developing a master communication plan for the power sector as whole. Concrete schemes would be framed based on modern dedicated communication systems like satellite, optical fibre, digital radio techniques, etc., consistent with the above master plan.

REGIONAL COOPERATION

The Chukha Hydro-Electric Project in Bhutan with an installed capacity of 336 mw (4 × 84 mw) is in an advanced stage of construction by a team of Indian engineers. Financed by India, the execution of the project is monitored by Department of Power with the Central Electricity Authority and Central Water Commission rendering consultancy services. Department of Power coordinates the technical and management inputs for the project. Its four generating units have since been commissioned.

Also in Bhutan, India is constructing Geysta Hydro-Electric Project with an installed capacity of 3 × 500 mw and Khaling Hydro-Electric Project with an installed capacity of 3 × 200 kw at present. The work on these two small hydro projects is also in an advance stage.

RURAL ELECTRIFICATION

The rural electrification schemes are financed by the state governments as well as the Rural Electrification Corporation. By the end of the Sixth Plan, 3.77 lakh villages had been electrified and about 59 lakh pumpsets energised representing 65.4 per cent of the total villages and 49.98 per cent of the total potential for pumpsets in the country.

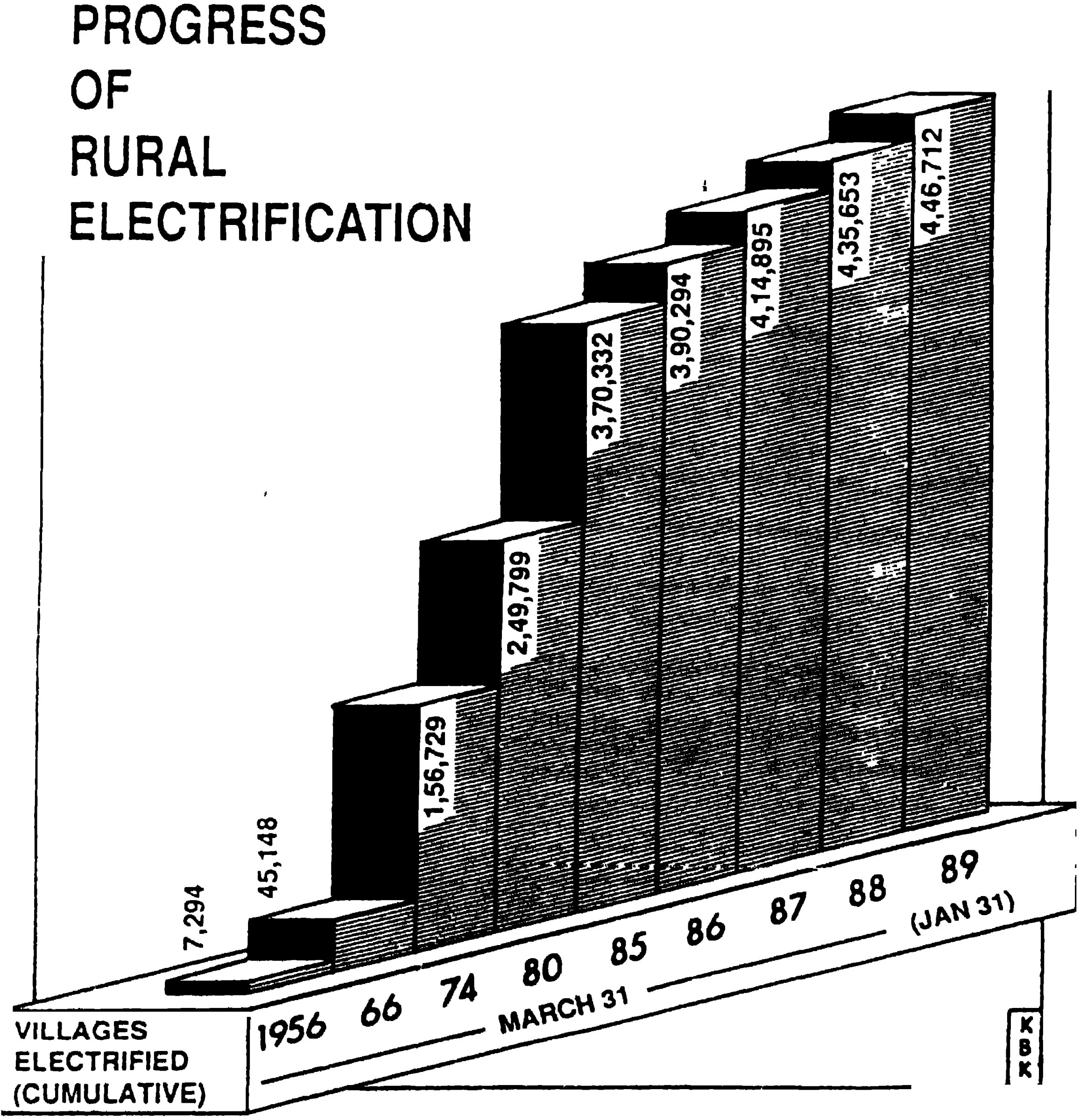
Up to January 1989, 4.47 lakh villages were electrified and 76.2 lakh pumpsets energised. The electrification of tribal villages and *harijan bastis* was also given special attention. Out of a total of 1.1 lakh tribal villages, 59,740 had been electrified and street lighting facility has been extended to 2.06 lakh harijan bastis up to the end of November 1988.

POWER CORPORATIONS

NATIONAL THERMAL POWER CORPORATION

National Thermal Power Corporation (NTPC) was incorporated in November 1975 as a public sector undertaking with the main objective of planning, promoting and organising the integrated development of thermal power in the country. The Corporation has been entrusted with the task of execution and operation of large pit-head thermal power stations and associated transmission networks. The authorised share capital of the Corporation is Rs 6,000 crore.

NTPC is presently setting up nine super thermal power stations and three


PROGRESS
OF
RURAL
ELECTRIFICATION
7,294
45,148
1,56,729
2,49,799
3,70,332
3,90,294
4,14,895
4,35,653
4,46,712
VILLAGES
ELECTRIFIED
(CUMULATIVE)
1956
66
74
80
85
86
87
88
89
MARCH 31
(JAN 31)
KBK

combined cycle gas-based power stations, with a total installed capacity of 14,370 mw at Singrauli (UP), Korba (MP), Ramagundam (AP), Farakka (WB), Vindhyachal (MP), Rihand (UP), Kahalgaon (Bihar), Talcher (Orissa) and National Capital TPP (UP). The three gas-based projects being set up are at Anta (Rajasthan), Auraiya (UP) and Kawas (Gujarat). The Corporation is also executing transmission lines with a total length of about 17,600 circuit km. The total estimated cost of the projects is Rs 13,757.5 crore. Five units of 200 mw each and two units of 500 mw at Singrauli, three units of 200 mw each and two units of 50 mw at Korba, three units of 200 mw each and one unit of 500 mw at Ramagundam, three units of 200 mw each at Farakka, two units of 210 mw each at Vindhyachal and one unit of 500 mw at Rihand have been commissioned. NTPC has also been managing Badarpur Thermal Power Station at Delhi on an agency basis.

NATIONAL PROJECTS CONSTRUCTION CORPORATION

National Projects Construction Corporation (NPCC), a public sector construction company was set up in 1957 as a joint venture of Central and state governments and also as a construction contracting agency for the execution of multi-purpose river valley projects, power projects and other heavy engineering projects. As part of diversification plan, the Corporation proposes to take up the work of transmission line also. Over the last 30 years, NPCC has successfully completed numerous projects of national importance in the field of irrigation, flood control, thermal and hydro-power stations, industrial projects, air fields, housing and other projects in remote and hazardous locations in almost every part of the country.

NATIONAL HYDRO-ELECTRIC POWER CORPORATION

National Hydro-Electric Power Corporation (NHPC) was incorporated in November 1975 with the objectives to plan, promote and organise the integrated development of hydro-electric power. The NHPC is presently engaged in the construction of—Uri and and Dulhasti (both in Jammu and Kashmir), Chamera (Himachal Pradesh) and Tanakpur (Uttar Pradesh). NHPC is also responsible for the operation and maintenance of Baira Siul Hydro-Electric Project (Himachal Pradesh), and Salal Power Station (J and K) and Loktak Hydro-Electric Project (Manipur).

RURAL ELECTRIFICATION CORPORATION

Rural Electrification Corporation (REC) was set up in July 1969 with the primary objective of promoting rural electrification by financing rural electrification schemes and rural electric cooperatives in the states. REC has been rendering consultancy services within and outside the country on various aspects of rural development, specially rural electrification.

The REC has advanced Rs 3,397 crore as loan up to 1987-88 to states and state electricity boards for rural electrification schemes. During 1988-89 REC advanced Rs 314.23 crore as loan.

DAMODAR VALLEY CORPORATION

Damodar Valley Corporation (DVC) was established in 1948 under an Act of Parliament for the unified development of the Damodar valley covering an area of 24,235 sq km in Bihar and West Bengal. The functions assigned to the Corporation are control of floods, irrigation, generation and transmission of power, besides activities like navigation, soil conservation, promotion of public health, agricultural, industrial and economic development of the valley. The Corporation has three thermal power stations at Bokaro, Chandrapura and Durgapur with a total installed capacity (derated) of 1,545 mw. The Corporation has three multi-purpose dams at Tilaiya, Maithon and Konar. The Corporation is installing two thermal units of 210 mw each at Bokaro 'B', three thermal units of 210 mw each at Mejia, one reversible pump turbine unit of 40 mw at Panchet and three gas turbine units of 30 mw each at Maithon.

NORTH-EASTERN ELECTRIC POWER CORPORATION LIMITED

North-Eastern Electric Power Corporation (NEEPCO) registered in April 1976, provides and promotes an integrated power system in the north-eastern region and formulates and recommends to the Government through the North-Eastern Council a regional policy for development of power. The Corporation has already completed Kopili HE Project with an installed capacity of 150 mw. NEEPCO is presently engaged in the construction of four projects, one each in Nagaland and Arunachal Pradesh and two in Assam.

BHAKRA-BEAS MANAGEMENT BOARD AND BEAS CONSTRUCTION BOARD

Under the Punjab Reorganisation Act, 1966 the management of the Bhakra Dam and reservoirs and Nangal Dam and works appurtenant thereto was vested in Bhakra Management Board. Construction of the Beas Project was undertaken by Beas Construction Board. After the completion of works of the Beas Project, the management was taken over by Bakhra Management Board redesignated as the Bhakra-Beas Management Board (BBMB). BBMB now manages hydro-electric power stations of the Bhakra Beas systems, namely, Bhakra Right Bank (660 mw), Bhakra Left Bank (540 mw), Ganguwal (77 mw), Kotla (77 mw), Dehar Stage I (660 mw), Dehar Stage II (330 mw), Pong Stage I (240 mw) and Pong Stage II (120 mw), having a total installed capacity of 2,704 mw.

POWER ENGINEERS TRAINING SOCIETY

Power Engineers Training Society was established in January 1980 to function as an apex national body for meeting the training requirements of power sector in the country. The Society is responsible for coordinating training programmes of various state electricity boards, power stations, etc., and supplementing these with its own training activities. The Society has four regional Thermal Power

Stations Personnel Training Institutes at Neyveli, Durgapur, Badarpur (New Delhi) and Nagpur. These training institutes conduct regular induction courses, in-service refresher/short-term courses and on-job/on-plant training programmes for operators and engineers of thermal power stations/state electricity boards. A simulator installed at the Training Institute at Badarpur (New Delhi) provides training to engineers and operators of 210 mw thermal units.

CENTRAL POWER RESEARCH INSTITUTE

Central Power Research Institute, Bangalore, which was set up in 1960 as a subordinate office under the erstwhile Central Water and Power Commission (Power Wing), was reorganised and registered as a society under the Karnataka Societies Act, 1960 in January 1978. The Institute is an apex body for Research and Development in the power sector and conducts testing of electrical apparatus in accordance with the national/international standards to meet fully the research and testing needs of electrical, transmission and distribution equipment. While the Central Power Research Institute has a Switchgear Testing and Development Station at Bhopal, the main complex of its laboratories is at Bangalore.

CENTRAL BOARD OF IRRIGATION AND POWER

Central Board of Irrigation and Power (CBI&P) was constituted in 1927 with the main objectives of facilitating the dissemination of knowledge and rendering advice to the state governments/state electricity boards on technical matters, especially in research. The CBI&P was later registered as a society, in 1975.

Various state electricity boards and other utilities have set up research stations to undertake research in various fields and on operational problems in the power sector. The Central Board of Irrigation and Power coordinates research activities of different research stations and disseminates results of their studies financed by the Department of Power as grant-in-aid. The Board also acts as National Committee for Conference International Des Grants Reslaux Electriquax (CIGRE).

COAL

Coal as a vital energy resource is playing a crucial role and will continue to do so as our petroleum reserves are scarce. Coal and lignite account for about 60 per cent of the country's commercial energy consumption. Besides, coal is also an essential input in the steel and carbo-chemical industries. Coal has the added advantage of its possible conversion to gas, electricity and even oil.

COAL RESERVES

The coal reserves of India, as per assessment made by the Geological Survey of India up to January, 1989 are 17,633.04 crore tonnes for coal seams of 0.5 metre and above in thickness down to a depth of 1,200 metres. The distribution of coal reserves in different states is shown in table 19.2.

TABLE 19.2 DISTRIBUTION OF COAL RESERVES

STATE	(Crore tonnes)
(a) Andhra Pradesh	1,008.62
(b) Arunachal Pradesh	9.02
(c) Assam	28.00
(d) Bihar	5,913.22
(e) Madhya Pradesh	2,881.46
(f) Maharashtra	527.18
(g) Meghalaya	45.89
(h) Nagaland	1.25
(i) Orissa	4,155.66
(j) Uttar Pradesh	106.22
(k) West Bengal	2,956.54
Total	17,633.04

MAJOR COALFIELDS

The major coalfields of the country are: Raniganj, Jharia, East Bokaro and West Bokaro, Pench-Kanhan, Tawa Valley, Singrauli, Talcher, Chanda-Wardha, Godavari Valley, etc.

PRODUCTION

Coal has been recognised as a primary source of raw material for meeting metallurgical and energy requirements of the country. Several steps have been, therefore, taken by the Government to step up coal production to meet the increasing demand of coal for industrial and domestic uses. The coal production in India in 1987-88 had been 17.98 crore tonnes registering nearly 8.4 per cent growth over 1986-87. The growth of coal production in forty years since independence has been more than five times and this has placed India into fifth position on the global map. The strategies for the production have been: (i) increasing the production of existing mines through marginal improvement; (ii) reorganisation/reconstruction of existing mines having potential for upgradation of production through mechanisation, and (iii) opening up new mines both underground and opencast adopting latest technology.

DISTRIBUTION OF COAL

Distribution of coal to the consumers other than coking coal used for metallurgical purposes is decontrolled. Coking coal used for metallurgical purposes is under the statutory control of the Coal Controller and is regulated under the Collieries Control Order, 1945. The Standing Linkage Committee set up in the Department of Coal undertakes the responsibility for distribution of coal to power and cement plants which are in the core sector. Despatches of coal to other industries is also regulated even after decontrol under the system of sponsorship in regard to allotment of wagons by Railways to carry the coal. The allocation of soft coke to various states/union territories has been taken over by the Department of Coal from April 1985. Soft coke allocation is made on half yearly basis after discussion with the state governments, Railways and Ministry of Civil Supplies.

Despatch of coal during 1988-89 (February 1989) to major coal consumer industries is given in table 19.3

TABLE 19.3 DESPATCH OF COAL

(Lakh tonnes)

Power	Steel	Loco	Cement	Fertilisers	Soft Coke making	Brick Kiln other industries.
917.8	217.2	58.7	87.6	35.7	16.1	319.0

PROJECTS AND PLANNING

Coal mining projects costing up to Rs 20 crore are sanctioned by coal companies. Coal projects costing more than Rs 20 crore are sanctioned by the Government. As on 31 December 1988, 453 coal projects, each costing Rs 2 crore and more with a total investment of Rs 10,302.45 crore have been sanctioned. Of this, 290 are coal mining projects and remaining ones are non-mining projects like washeries, fire control projects, captive power plants, water supply schemes, etc. The ultimate mining capacity of these coal mining projects will be about 2,542.9 lakh tonnes per annum, when completed.

MINING

Coal mining first started at Raniganj, West Bengal in 1774. After independence, particularly since nationalisation of coal mines, there has been a rapid stride in coal mining activities and the coal production rose from about 3.2 crore tonnes in 1950 to 17.98 crore tonnes in 1987-88 and is slated to go up to 21.12 crore tonnes in 1989-90. Coal production in the country is now almost completely in the public sector barring captive coal mines of a private sector steel company.

The production of coal in the public sector is organised mainly by Coal India Ltd. (CIL) through its seven subsidiary companies, namely, Eastern Coalfields

Ltd. (ECL), Bharat Coking Coal Ltd. (BCCL), Central Coalfields Ltd. (CCL), Northern Coalfields Ltd. (NCL), South-Eastern Coalfields Ltd. (SECL), Western Coalfields Ltd. (WCL) and Central Mining Planning and Design Institute Ltd. (CMPDIL). The Singareni Collieries Company Ltd. (SCCL), a joint venture of the Central government and the Andhra Pradesh government is also engaged in coal production.

The most significant and far-reaching change embracing various spheres of mining activities relate to 'mining technology'. It has witnessed various revolutionary developments in the coal sector since independence of the country and particularly after the nationalisation of coal mines in 1971-73. Starting from a scratch in 1947 about 95 per cent of the requirement of mining equipment is now available indigenously. There were only three coking coal washeries in the country at the beginning of the Second Plan. The country has now 19 coking coal washeries with an annual throughput capacity of 3.27 crore tonnes.

CONSERVATION AND SAFETY

A major thrust for conservation of coal is being provided by taking up various schemes for scientific investigation and actual field trials under the science and technology plan of the Department of Coal. The Coal Conservation and Development Advisory Committee constituted under the Coal Mine (Conservation and Development) Rules, 1975 looks after conservation and safety of coal mines. A number of research and development activities in the coal sector are carried out under the overall guidance and supervision of the Standing Scientific and Research Committee of the Department of Coal. The research is carried out in the fields of production, productivity, safety, coal preparation, coal utilisation, environment and ecology.

One of the principal objects of nationalisation of coal mines was to improve standard of safety in coal industry and prevent exploitation of coal workers. The safety situation in the coal mines has been speedily improving since nationalisation of mines in 1973. Scientific mining, introduction of safety technology, extending open-cast mining and greater involvement of workers in safety measures are some of the main factors responsible for overall improvement in the safety situation in the coal industry. A standing committee on safety in coal mines regularly reviews the safety standards in the coal mines. It is a tripartite body in which the members of Coal Industry, Central Trade Unions and DGMS are represented. Coal India has also its own safety board and safety committees exist at unit areas at company levels.

WELFARE OF COAL MINERS

The coal industry employs over seven lakh workers and, therefore, increasing administrative and financial provisions are being made for their welfare. Thrust has been on improving housing, water supply, medical and educational facilities. Efforts have also been made to improve general environmental and ecological conditions in the coal fields by planting more trees and suppressing dust to the extent it is feasible.

LIGNITE

Lignite deposits occur in the country mostly at Neyveli in the South Arcot district of Tamil Nadu. It is about 330 crore tonnes or roughly 90 per cent of the total lignite reserves in the country. Smaller deposits exist in Gujarat, Rajasthan and Jammu and Kashmir. Out of the 330 crore tonnes about 200 crore tonnes fall in the proven category. Neyveli Lignite has much less ash content than the average Indian coal and is consistent in quality.

NEYVELI LIGNITE CORPORATION

The lignite reserves at Neyveli in the South Arcot district of Tamil Nadu are exploited by the Neyveli Lignite Corporation Limited, which was incorporated in 1956. During the Second and Third Five Year Plans, an integrated complex was built up at Neyveli consisting of a lignite mine (65 lakh tonnes per annum), a 600 mw lignite fired thermal power station, a briquetting and carbonisation plant to produce coke (3.27 lakh tonnes per annum), a fertiliser plant (1.52 lakh tonnes per annum) which was originally based on lignite and was later changed over to oil base, and a clay beneficiation plant (6,000 tonnes per annum). Lignite production on a regular basis started in May 1962 with the commissioning of the first 50 mw unit of the thermal power station. To meet the power deficit in the southern region, the Government sanctioned a second mine of 47 lakh tonnes, which was subsequently expanded to 105 lakh tonnes capacity at an estimated cost of Rs 334.77 crore and a second thermal power station with 630 mw capacity. The capacity of this power station was enhanced to 1,470 mw.

The production of lignite in 1988-89 (up to December 1988) was 83.42 lakh tonnes and that of power generation was 5,746.1 mu.

OIL AND NATURAL GAS

Petroleum industry in India has made headway only after independence. Beginning from a modest level of indigenous crude production and refinery crude throughput of around 2.5 lakh tonnes and consumption of petroleum products of 34 lakh tonnes in 1950-51, crude oil production during 1988 (April-December) reached a level of about 2.39 crore tonnes and the consumption level at around 3.64 crore tonnes. About 131.18 lakh tonnes of crude oil and 45.27 lakh tonnes of petroleum products were imported to meet the country's requirement in 1988 (April-December). During the same period, 15.8 lakh tonnes of petroleum products were exported. The net import of petroleum products was 29.47 lakh tonnes. The refineries' crude throughout during 1988 (April-December) stood at about 3.55 crore tonnes.

The oil industry in India is divided into three broad segments: (i) oil exploration and production; (ii) refinery and marketing, and (iii) petro-chemical and downstream units.

EXPLORATION AND PRODUCTION

Oil exploration and production started in India in an extensive and systematic way after the setting up of Oil and Natural Gas Commission (ONGC) in 1956. With the acquisition of the shares of Burma Oil Company by the Government in 1981. Oil India Limited (OIL) became the second public sector undertaking engaged in oil exploration and production in the country. Besides the areas in the eastern region where OIL was conducting exploration, they have now extended their exploration activities to Mahanadi basin and parts of Rajasthan and Andaman.

The exploratory efforts envisaged during the Seventh Plan (1985-90) are nearly three times that of the Sixth Plan. The new exploration strategy developed during the first two years of the Seventh Plan places emphasis on intensive exploratory surveys and drilling in order to add to petroleum reserves and to augment production as early as possible. In order to supplement the efforts of ONGC and OIL, the Government in 1986-87 invited experienced foreign oil companies to take up oil exploration in 27 blocks offshore: 12 bids covering nine blocks were received from seven foreign oil companies and production sharing contracts for nine blocks have been signed. Further, arrangements have been made for taking up intensive integrated exploration with Soviet assistance in Cambay, Cauvery and Bengal basins. Work has already started in the Cauvery and Cambay basins.

In the year 1988-89, oil has been discovered in Gujarat, Tamil Nadu, Andhra Pradesh and Assam. In the offshore areas, oil has been discovered in eight to ten new places and further work is going on to bring these discoveries to commercial production as early as possible. Early production systems have been developed in three new structures producing heavy oil in Gujarat.

Accelerated efforts in the field of oil exploration and development have paid dividends by way of increased production of crude oil. At the beginning of 1980-81, the annual production of crude oil in India was 105.1 lakh tonnes. In 1988 (April-December), the oil production increased to 2.20 crore tonnes.

There has also been significant increase in the production of natural gas consistent with increase in the balance recoverable reserves of gas since the beginning of the current decade. The gross production of natural gas increased from 236 crore cubic metres in 1980-81 to an estimated 787 crore cubic metres in 1988-89.

As a result of the three-pronged exploration strategy during the first three years of the Seventh Plan, it has been possible to add about 9.54 crore tonnes to the geological reserves of oil and oil equivalent of gas. The net addition to balance recoverable reserves of oil and oil equivalent of gas had been about 1.23 crore tonnes.

REFINING

There are at present 12 refineries in the country, all in the public sector. The total refining capacity as on 1 April 1988 stood at 467 lakh tonnes as against 318 lakh tonnes per annum at the beginning of 1980-81. With the implementation of the programme for expansion of Mathura and Koyali refineries, the refining capacity is expected to increase further considerably.

Consistent with the increase in refining capacity, there has also been substantial increase in refineries 'crude throughput in the country. The refineries' crude throughput, which was 258 lakh tonnes in 1980-81, increased to 356 lakh tonnes in 1984-85, to 429 lakh tonnes in 1985-86 and further to 457 lakh tonnes in 1986-87 and to 477 lakh tonnes in 1987-88. These constitute significant step up in both refining capacity and refineries' crude throughput since 1980-81.

The Burmah-Shell Refinery at Trombay and Caltex Refinery at Vishakhapatnam together with their marketing associates were taken over by the Government in 1976. The Burmah-Shell Refinery was renamed as Bharat Petroleum Corporation Limited (BPCL) and the Caltex Oil Refining (India) Limited was amalgamated with Hindustan Petroleum Corporation Limited (HPCL) in March 1978. The public sector refineries at Guwahati, Barauni, Koyali, Haldia, Digboi and Mathura are owned by Indian Oil Corporation Limited (IOC), while those at Cochin and Madras are owned by the joint sector companies. Refinery-wise capacities and actual crude throughput during the last five years, are given in table 19.4.

COCHIN REFINERIES

Cochin Refineries Ltd. (CRL) was incorporated in September 1963 with a designed capacity to process 25 lakh tonnes of crude per annum, which after the expansion in August 1973 was raised to 33 lakh tonnes per annum and was further increased to 45 lakh tonnes. Its paid-up capital as on March 1988 was Rs 11.67 crore.

MADRAS REFINERIES

Madras Refineries Ltd. (MRL) was incorporated as a company in December 1965 with an authorised capital of Rs 13.5 crore pursuant to the agreement between the Government of India, National Iranian Oil Company and AMOCO India Inc. of USA. The capacity of this refinery has increased to 56 lakh tonnes per annum. The paid-up capital of the undertaking as on March 1988 was Rs 98.25 crore.

The overall capacity utilisation in the refineries during 1986-87 and 1987-88 has remained well above the level of 90 per cent as against 74 and 76 per cent of the world as a whole during 1985 and 1986 respectively. The Government has already approved the proposal to set up a refinery of 60 lakh tonnes capacity at Karnal (Haryana) and has also approved the perparation of the detailed project report for Mangalore refinery. Karnal Refinery is proposed to be established as a joint venture between Indian Oil Corporation and Tata Chemicals Ltd. and the Mangalore Refinery jointly by the Hindustan Petroleum Corporation Ltd. and Indian Rayon and Industries Ltd.

TABLE 19.4 REFINING CAPACITY AND CRUDE THROUGHPUT

Refinery	Capacity as on 1 April 1989 (Lakh tonnes)	Actual throughput (Lakh tonnes)				
		1984-85	1985-86	1986-87	1987-88	1988-89[1]
1. IOC, Digboi	5.0	5.31	5.29	5.5	5.5	4.24
2. HPCL, Bombay	35.0	32.20	43.75	50.1	54.6	38.32
3. BPCL, Bombay	60.0	54.81	63.89	55.8	65.4	42.64
4. HPCL, Vishakhapatnam	45.0	12.49	26.59	37.2	36.2	26.56
5. IOC, Guwahati	8.5	7.61	7.66	8.0	8.1	5.76
6. IOC, Barauni	33.0	28.96	27.66	28.6	26.4	21.07
7. IOC, Koyali	95.0	77.77	78.30	78.4	84.4	64.08
8. CRL, Cochin	45.0	8.72	27.49	41.7	41.1	35.07
9. MRL, Madras	56.0	34.13	50.57	51.9	51.3	43.36
10. IOC, Haldia	27.5	23.65	28.22	26.2	28.1	18.35
11. BRPL, Assam	13.5	7.52	8.93	10.1	11.1	8.63
12. IOC, Mathura	75.0	62.39	60.75	63.5	65.3	46.54
TOTAL	498.5	355.56	429.10	457.0	477.4	354.62

[1] Provisional for April-December 1988.

ENERGY CONSERVATION SCHEMES

The refineries are implementing various energy conservation schemes, which include: (a) revamping/replacing furnaces; (b) replacement of boilers; (c) addition of air preheaters/economisers, and (d) addition of some more heat exchangers. These will save several crore rupees worth of petroleum fuel.

MARKETING AND DISTRIBUTION

The marketing and distribution network of the Indian petroleum industry is fairly widespread and by and large under the control of the public sector oil companies. Apart from over 2,750 kms of product pipeline, the industry has a network of about 14,174 MS/HSD retail outlets, 5,647 LDO/kerosene dealers and over 3,300 LPG distributors as on 1 April 1988. Since the marketing and distribution network is directly under the control of public sector oil companies, this generally ensures fair distribution of products over the length and breadth of the country at stipulated prices.

CORPORATIONS

INDIAN OIL CORPORATION

Indian Oil Corporation Ltd. (IOC) was set up in September 1964 by amalgamating the Indian Refineries Ltd. (estd. in 1958) with the Indian Oil Company Ltd. (estd. in 1959). The Corporation has three Divisions, namely, (i) Marketing Division, with headquarters at Bombay; (ii) Refineries and Pipelines Division, with headquarters at Delhi, and (iii) Assam Oil Division, with headquarters at Digboi.

The Indian Oil Corporation has a research and development centre at Faridabad in Haryana. The centre provides technical service to customers and is engaged in the development of sophisticated lubricating oils. The centre is actively working on the possibilities of production and utilisation of viable alternate substitute fuels. The IOC is also having a wholly owned subsidiary called Indian Oil Blending Ltd. (IOBL) which is engaged in blending lubricants.

The market share of the Corporation was 58.1 per cent of the total oil industry's sales during 1988. As on 30 November 1988, the Corporation had in existence a total of 1,674 cooking gas (LPG) distributorships, 5,562 retail outlet (petrol/diesel) dealerships and 2,960 kerosene/light diesel oil dealerships in the country.

BHARAT PETROLEUM CORPORATION LTD

Following the Government's acquisition of the two Burmah-Shell companies in January 1976, the name of Burmah-Shell Refineries Ltd. was changed to Bharat Refineries Ltd. from 12 February 1976. Being an integrated refining and marketing company, the name of the company was changed to Bharat Petroleum Corporation Ltd. (BPCL) from 1 August 1977. The Company is engaged in the processing of crude oil in its refinery at Bombay and storage, distribution and marketing of petroleum products in the country. In addition, it is in the process of diversifying petro-chemicals using certain refinery streams as feedstock.

The market share of BPCL in 1986-87 was 18.6 per cent of the total oil industry's sales. As on 1 April 1988, the company had a total of 651 cooking gas (LPG) distributorships, 3,741 petrol/diesel retail outlets and 853 kerosene oil/LDO dealerships.

HINDUSTAN PETROLEUM CORPORATION

Hindustan Petroleum Corporation Ltd. (HPCL) was set up on 15 July 1974 by acquiring the assets in India of ESSO Eastern Inc. USA and became wholly Government-owned company. On 31 December 1976 Government acquired Caltex Oil Refining (India) and merged it with HPCL. The main activities of HPCL are refining of crude oil, manufacturing lubricating base oil, manufacturing and blending of lubricants, grease and petroleum products and related automative accessories all over the country and marketing of petroleum products, including LPG.

The market share of HPCL in 1988 was 18.8 per cent of the total oil industry's sales. As on 1 April 1988, the company had a total of 1,048 cooking gas (LPG) distributorships, 3,750 retail outlets (petrol/diesel) and 1,532 kerosene/light diesel oil dealerships.

LUBRIZOL INDIA LTD.

Lubrizol India Ltd. was incorporated in July 1966 under the Companies Act in pursuance of an agreement between the Government of India and Lubrizol Corporation, USA, in December 1965. The company manufactures chemical additives for use in petroleum based fuels and lubricants needed for the core sectors of the economy. It also manufactures some of the major intermediates locally.

IBP COMPANY LTD.

IBP Co. Ltd. apart from marketing petroleum products obtained from IOC, has three other divisions, namely, Engineering Division, Oil Division and Chemical Division. The former manufactures high vacuum engineering items like cryo-containers and the latter, industrial explosives.

Balmer Lawrie and Co. Ltd. is a subsidiary of IBP. It is engaged in the manufacture of lubricating greases and tube barrels and in tea export, marketing agency-products and travel business.

The major activities of Biecco Lawrie Ltd. are manufacturing and marketing electrical motors and switchgear equipment and undertaking electrical repairs of rotating machinery.

NATURAL GAS

Natural gas is emerging as an important source of commercial energy in view of the large reserves that have been established in the country, particularly in South Basin off West Coast of India. As on 1 January 1985, India had 47,900 crore cubic metres of recoverable gas reserves which had increase to 54,100 crore cubic metres by January 1987. There has been substantial increase in the supply of natural gas. Against the supply of 622 crore cubic metres in 1987-88, the supply in 1988-89 was estimated to the tune of 787 crore cubic metres. Oil strikes at Cauvery Offshore and at Nada in Cambay Basin as also the gas found at Tanot in Jaisalmer Basin in Rajasthan, were the major discoveries during 1988-89. Another noteworthy feature has been the commencement of production from South Basin Gas Field since September 1988. Natural gas is also making significant contribution to the household sector by way of LPG extracted from associated gas. About 30 per cent of the country's output of LPG comes from this source.

GAS AUTHORITY OF INDIA LTD.

In view of the growing importance of natural gas in the country, the Gas Authority of India Ltd. (GAIL), a wholly Government-owned undertaking was established on 16 August 1984 with an authorised share capital of Rs 500 crore. The main objectives of the company are processing, marketing, transportation and distribution of natural gas in all its forms. GAIL is now implementing the Hazira-Bijapur-Jagdishpur (HBJ) gas pipeline project at an estimated cost of Rs 1,700.17 crore. The project contemplates laying of 1,730 km long pipeline with necessary facilities from Hazira in Gujarat through Madhya Pradesh and Rajasthan to Uttar Pradesh to meet the feedstock requirements of six fertiliser plants (four in Uttar Pradesh and one each in Madhya Pradesh and Rajasthan) and fuel requirements of two of the three power plants being set up along the pipeline (one in Anta, Rajasthan and one in Auraiya, UP). The initial capacity of the pipelines is 182 lakh standard cubic metre per day. The cross-country HBJ pipe-laying work has almost been completed and the work on associated facilities is in progress. GAIL is also undertaking the work of extension of this pipeline to Delhi.

RESEARCH AND DEVELOPMENT

ONGC has established three research institutes, namely, the Keshavadev Malaviya Institute of Petroleum Exploration, Institute of Drilling Technology and Institute of Reservoir Studies. Established in 1963 in Dehra Dun, the Keshavadev Malaviya Institute of Petroleum Exploration undertakes applied research in petroleum geology, exploration geophysics, well-logging techniques and others. The Institute of Drilling Technology, also at Dehra Dun, undertakes research to make drilling faster, safer and more economical. It develops drilling techniques to improve the properties of drilling fluids and mud additives. The Institute of Reservoir Studies in Ahmadabad undertakes research in reservoir engineering. It has 15 main laboratories and a development group at Ahmadabad with a reservoir modelling group and a field development group at Dehra Dun.

OIL CONSERVATION

The demand, management and conservation of oil/POL has assumed vital importance in view of volatile nature of international oil market and the present gap between domestic demand and supply of oil, which is expected to grow in future. Studies made recently by various groups have identified energy saving potential of 20-30 per cent in the transport, agriculture and industrial sectors with moderate investments and payback period of less than three years. In the petroleum sector, the Petroleum Conservation Research Association is engaged in coordinating the activities in the field of conservation of petroleum products since 1976. The PCRA organises field activities, education campaigns and research and development activities in the industrial, transport, agriculture and domestic sectors. During the last 10 years the PCRA has been able to effect cumulative savings of petroleum products worth about Rs 450 crores by promoting various conservation activities. They have planned to intensify their efforts to achieve a total saving of Rs 492 crore during the Seventh Plan period.

PETRO-CHEMICALS

Ministry of Petroleum and Natural Gas is also implementing a number of programmes for the production and development of petro-chemicals in the country. The Bongaigaon Refinery and Petro-Chemicals Ltd. (BRPL) was incorporated in 1974 as a Central government undertaking with the objective of installation of a refinery and a petro-chemical complex having Xylene, Dimethyl Terepthalate and PSF units. The authorised share capital of the company initially was Rs 50 crore which was increased to Rs 200 crore in January 1984. The paid-up capital of the company is Rs 199.82 crore. Apart from this, many other refineries, such as Bharat Petroleum Corporation Ltd., Hindustan Petroleum Corporation Ltd., Cochin Refineries Ltd., Madras Refineries Ltd., and Indian Oil Corporation are also implementing a number of petro-chemical projects. In the Seventh Five Year Plan, an outlay of Rs 243 crore has been provided for implementing various schemes of petro-chemicals by the above oil companies.

ENGINEERING AND CONSULTANCY SERVICES

Engineers India Ltd. (EIL) was incorporated in 1965 and became a wholly Government-owned undertaking in 1967. The authorised capital of EIL is Rs two crore and paid-up capital Rs 100 lakhs as on 31 March 1987. The company renders design engineering and technical consultancy services to organisations both in public and private sectors in the fields of petroleum refining, pipelines, petro-chemical, fertilisers, chemicals, cement, paper, power, non-ferrous metallurgical plants, ocean engineering and other process related industries. In addition, it offers specialised services in process, design and development, commissioning and operation services, design of heat and mass transfer equipment, environment engineering planning and scheduling, cost engineering and material selection problems of process plants as well as procurement, inspection, transportation and customs clearance service.

INDIGENISATION

As a result of the policy of the Government to encourage indigenous capabilities for supporting exploration and production activity, a number of facilities have been created indigenously for manufacture of equipment and for providing oilfield services. Whereas in 1981-82 only about 25 per cent of our requirements were met from indigenous sources, at present over 62.5 per cent of the requirements are met from the domestic sources. Indigenous units are given special facilities and price preference to enable them to compete successfully with foreign bidders and to provide efficient service and equipment at competitive rates. Many public sector units like Bharat Heavy Electricals Ltd., Hindustan Shipyard, Mazagon Dockyard Ltd. and Bharat Pumps and Compressors are at present supplying equipment to the oil industry. Some of the items for which indigenous capabilities have been established include deep drilling rigs, drill ships, jack-up rigs, offshore supply vessels, well-platforms and multi-purpose supply vessels. Some Indian companies/joint ventures have also started providing oilfield services to Oil and Natural Gas Commission.

NON-CONVENTIONAL ENERGY SOURCES

Energy planners and scientists of the world are now thinking in terms of decentralised energy system. India has taken a lead in this regard by setting up a high powered Commission of Additional Sources of Energy (CASE) on 12 March 1981 and the Department of Non-Conventional Energy Sources on 6 September 1982 While the CASE formulates the policies and programmes, the Department of Non-Conventional Energy Sources is responsible for their implementation. It also functions as the secretariat to CASE. It has set up regional offices at Chandigarh, Hyderabad, Bhopal, Ahmadabad, Guwahati and Lucknow. A large number of monitoring units have been set up all over the country to monitor the biogas programme.

The development and utilisation of new and renewable sources of energy systems and devices in India have been remarkable. According to the paper entitled Energy-2001-Perspective Plan in the area of NRSE various Non-Conventional sources have the potential of generating/saving energy equivalent to 25.02 crore tonnes of coal replacement including over 15,000 mw energy generation by the turn of century which, it is estimated will make 20 per cent of the total energy demand by the year 2001.

BIOGAS DEVELOPMENT

Biogas is the most important component of renewable energy supplies. As a by-product, the biogas plant produces enriched fertiliser also. Its other benefits are improvement in sanitation, reduction in the incidence of eye disease among women and easy and efficient cooking. One of the greatest merits of biogas is its versatility. It can be used for cooking, lighting and power generation.

Under the National Programme on Biogas Development, one million family size biogas plants have been installed which are producing gas equivalent to the saving of over 35 lakh tonnes of fuelwood valued at Rs 140 crore annually. Besides, they are generating manure to the extent of above 170 lakh tonnes worth over Rs 140 crore annually. Similarly, over 300 institutional/community biogas plants have been installed for providing energy for cooking, lighting, etc., for the village community as a whole. Significant progress has been made to utilise alternate feedstocks such as human excreta, agricultural residues and water hyacinth. Construction of latrine-linked biogas plants is gaining popularity which besides providing cooking energy, is improving sanitation and environment in the country. Additionally it dispenses with the age long practice of manually handling human excreta.

COOKING ENERGY

The greatest share of the energy consumed in our villages is used by kitchens. The Department, therefore, launched the National Improved Chulha Programme in December 1983 as one of the best and the cheapest devices to mitigate the health hazards and the drudgery of rural women and to conserve fuelwood and improve environment.

The improved *chulha* programme evoked tremendous response and positive action from all concerned. In view of its efficacy, the Housing and Urban Development Corporation (HUDCO) undertook construction/installation of one lakh improved chulhas per year under *Indira Awas Yojana* for weaker sections of the society. HUDCO also has decided that in future, house-building advances will be sanctioned by it only if an improved chulha is incorporated in the design of the house.

Through this programme over 40 lakh thermally efficient chulhas have been installed. These chulhas are of fixed and portable types providing thermal efficiency of above 20 per cent and 25 per cent respectively.

SOLAR ENERGY

Systematic and ceaseless efforts are being made to tap scientifically the abundant solar energy available in the country. A simple and common mode in solar energy utilisation is solar thermal conversion. A large number of applications in the area, particularly those where low grade thermal energy is needed have already become commercial. These include cooking, water heating, water desalination, space heating, crop drying, etc. Efforts are also afoot to develop economically viable solar collectors for high temperature applications. Installation of solar thermal systems and devices like solar water heating systems, both for domestic and industrial application, desalination systems, timber kiln, air conditioning, etc., covering an area of 55,000 square metres of collector area has helped to save or generate energy to the extent of 350 kwh per annum. Over 92,000 solar cookers were in use as on April 1988. Small and medium size solar power stations are also being planned for rural areas.

Over 11,000 solar photovoltaic street lights, 400 community lighting/TV systems, 800 solar photovoltaic water pumping systems and 200 domestic lighting units have been installed throughout the country. So far 2,700 villages have been provided with photovoltaic street lights. Importance of solar photovoltaic system is very high as it provides electricity at an economic cost in areas which are away from grid and require small amount of electricity for various uses. This programme of solar electrification in remote villages was conceived in consultation with Rural Electrification Corporation and the state electricity boards. In addition to Bharat Heavy Electricals Ltd., Central Electronics Ltd. and Rajasthan Electronic Instrument Ltd. have also entered the field of SPV production.

GEOTHERMAL ENERGY

Research and development activities relating to the cold storage unit and five kw power plant, both based on geothermal energy at Manikaran (Himachal Pradesh) are in full progress. The pilot cold storage plant at Manikaran using geothermal energy has shown positive results.

RURAL RENEWABLE ENERGY SYSTEMS

The concept of Rural Renewable Energy Systems has been put into practice with the initiation and setting up of integrated energy centres called *Urja Gram* which fulfil energy requirements of the village through locally available renewable sources. Most of these systems centre around a community biogas plant or the newly developed gasifiers for producing electric power from biomass and agricultural wastes. Other systems like wind mills, wind generators, solar photovoltaic lighting, hot water systems, improved chulhas and solar cookers are supplied/installed as per requirements/source availability of village in question. Selection of urja gram is done after a techno-economic and feasibility survey. Fifty three such urga grams have been established thoughout the country and another 113 are under various stages of implementation.

ENERGY FROM URBAN WASTE

A pilot plant to utilise solid municipal waste for conversion into energy in the form of electricity of 3.75 mw capacity has been established at Timarpur, Delhi.

POWER GENERATION

AGRO-THERMAL POWER PLANT

The Department of Non-Conventional Energy Sources in collaboration with the

Government of Punjab is setting up a 10 mw agro-thermal power plant based on rice husk at Jalkheri near Patiala.

AGRO-THERMAL CO-GENERATION PLANTS

The Department is cooperating with PAIDC for a joint sector project of Oswal Agro-Furane being set up in Punjab for the power generation component of the plant. The project envisages de-husking of large quantities of rice and utilisation of the husk in the first stage to extract furfural and then to fire the husk in a fluidised boiler linked with co-generation plant to generate 10 mw of electricity. This cent per cent export-oriented plant will have about 5 mw of surplus electricity to be connected to the grid. The electricity can be used *inter alia* for irrigation purposes.

BAGGASSE BASED CO-GENERATION PROJECTS

It has been estimated that the sugar industry in India can generate almost 2,000 mw as surplus electricity during crushing season. For instance a 2,000 TCD sugar mill using energy conservation principles with high steam condition boilers and back pressure turbine can generate 10 mw of electricity and sufficient process steam. After meeting factory's requirements, almost 6 mw can be surplus to be fed to the grid. Since the sugar factories are normally in rural areas, this surplus electricity could be used for irrigating sugarcane fields or for industrialisation of the rural areas.

WIND ENERGY

With a total capacity of 7.5 mw, over 95 lakh units of electricity have been fed to the state grids of Tamil Nadu, Orissa, Gujarat and Maharashtra through the setting up of wind farms. In addition, over 2,043 wind pumps have been installed for supply of energy for water pumping to meet irrigation and drinking requirements.

ENERGY PLANTATION

Waste and denuded lands are used for putting up plantation of fast growing and high calorific value trees and shrub species. The output provides fuelwood, fodder, power and substantial employment. Power from the energy plantation is derived either through gasification or through incineration. It is expected that projects of this type can deliver thousands of megawatt of power in a decentralised fashion, apart from providing fuelwood and charcoal for domestic use.

INDIAN RENEWABLE ENERGY DEVELOPMENT AGENCY LTD.

Indian Renewable Energy Development Agency was registered as a Government company under the Companies Act on 11 March 1987 with an authorised capital of Rs 10 crore with a view to promoting projects in the area of new and renewable sources of energy on a wider scale. Some of the major functions of the Agency include provision for partial financial support on soft loan basis for specific projects and schemes for generating and conserving energy through non-conventional and renewable materials and sources, manufacturers of such systems and devices, promotion of schemes for leasing out new and renewable sources of energy equipment to individuals and institutions functioning as a financial intermediary with the financial institutions on behalf of new and renewable sources of energy industry, etc.

India has made a substantial progress in harnessing NRSE for rural development and for conserving conventional energy. More progress is expected as costs come down further and commercialisation spreads. NRSE systems are already quite cost effective in a large number of areas.

INCENTIVES AND SUBSIDY

With a view to motivating people at large, the Government has from time to time announced various fiscal and financial incentives including grant of subsidy to the beneficiaries of non-conventional energy sources. These incentives are in the nature of exemption of income tax, central excise, exemption of customs duty on the import etc. Various state governments have also exempted sales tax on the sale of NRSE systems and devices. Some of the state governments have also announced subsidy out of their budget allocation in this area.

20 Industry

THE progress of industrialisation over the last 35 years has been a striking feature of Indian economic development. The process of industrialisation was launched as a conscious and deliberate policy in the early fifties. In pursuance of this policy, large investment has been made in building up capacity over a wide spectrum of industries. Industrial production has made rapid strides in terms of variety, quality and quantity. There has been a substantial diversification of the industrial base during this period with the consequent ability to produce a very broad range of industrial goods. Self-reliance has been achieved in basic and capital goods. Indigenous capabilities have now been established to the point of virtual self-sufficiency so that further expansion in various sectors such as mining, irrigation, power, chemicals, transport and communication can be based primarily on indigenous equipment.

The process of industrialisation has also fostered entrepreneurship and the development of a wide variety of technical, managerial and operative skills. Today, the country is in a position to provide consultancy services as well as managers, technicians and skilled workers for setting up industrial projects abroad.

A significant aspect of industrial development during the above period has been the predominant role assigned to the public sector in the establishment of basic industries. The public sector has taken the initiative for the development of various industries such as steel, non-ferrous metals, petroleum, coal, fertilisers and heavy engineering. It has also made investments in consumer industries like textiles, drugs and pharmaceuticals, cement and sugar. The number of public sector enterprises which was only five in March 1951 rose to 226 in March 1987.

In 1985-86, the Government initiated a number of measures aimed at removing the constraints on industrial growth and providing a more congenial environment for development. These include a scheme of re-endorsement of capacities, de-licensing of industries and broad-banding in respect of 65 selected industries (including those covered by the Monopolies and Restrictive Trade Practices Act) and also schemes for specific industries like textiles, sugar, electronics, etc. A technology upgradation scheme has been introduced in August 1987 by the Industrial Development Bank of India in five selected capital goods industries. The fundamental objective of these policies is to upgrade the efficiency and competitiveness of Indian industry so that Indian consumer is benefitted on the one hand and our industry acquires strength to compete in external markets. As a result of these measures, the industrial production recorded an average growth of over eight per cent. The investment climate in the country is one of buoyancy and confidence.

INDUSTRIAL POLICY

The Government had set out in its Industrial Policy Resolutions dated 6 April 1948 and 30 April 1956 the policy approach proposed to be pursued in the

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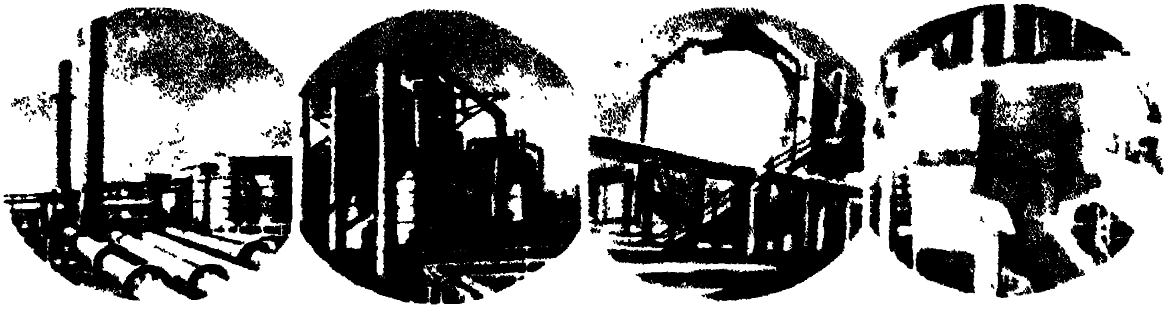

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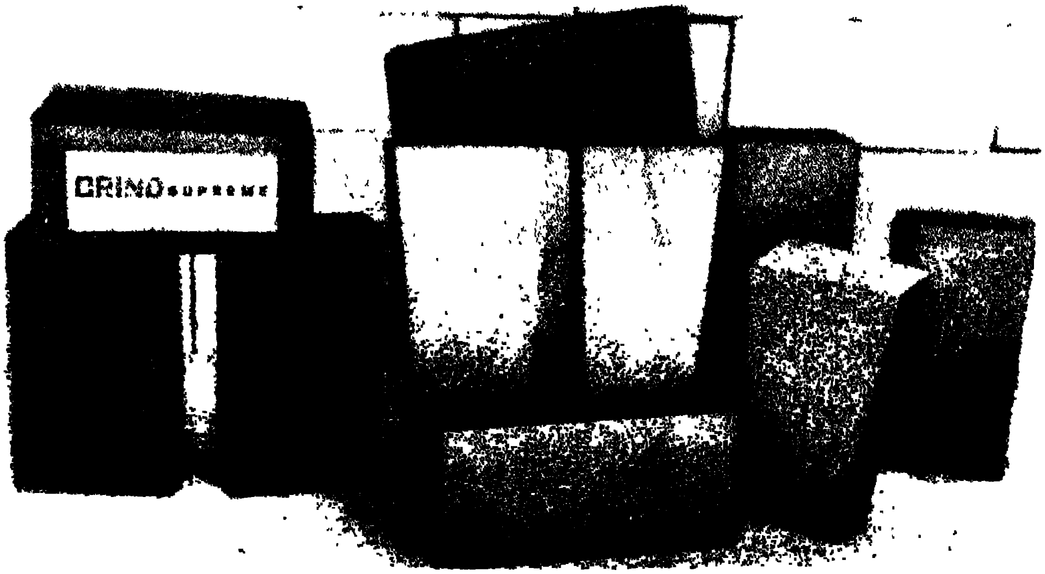

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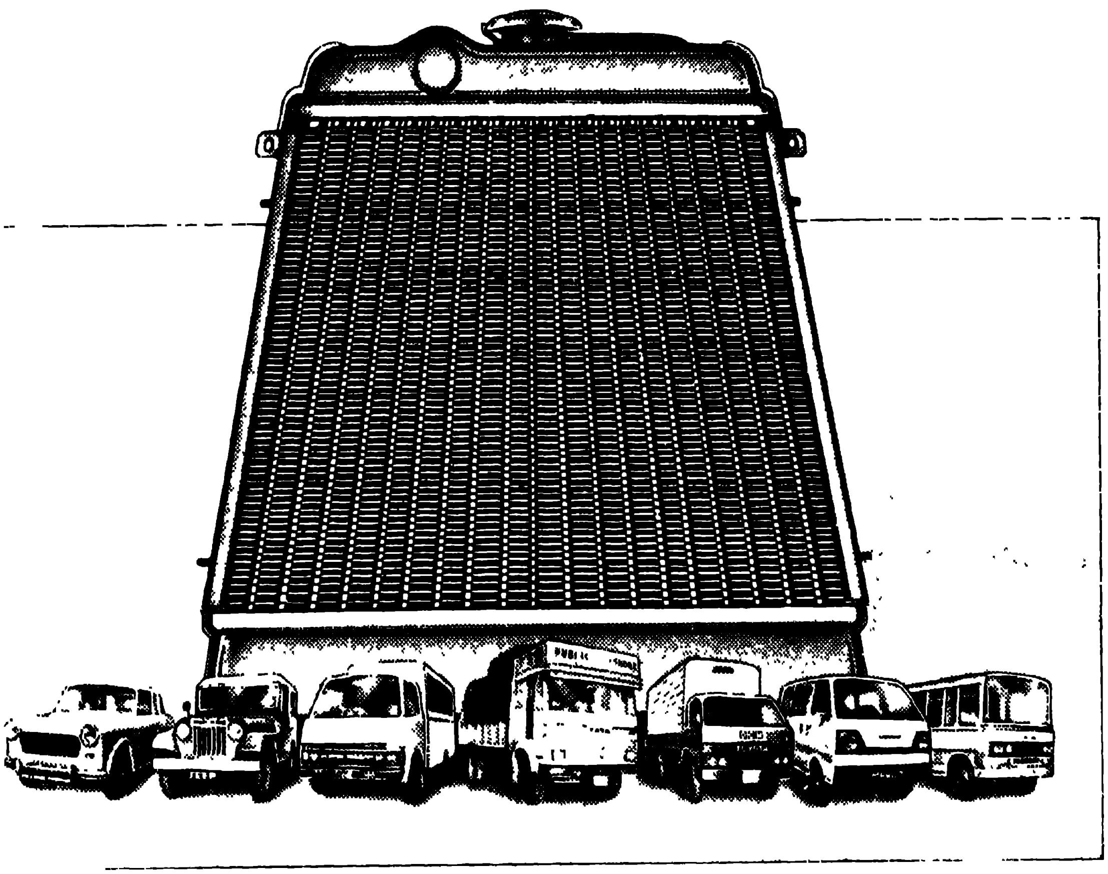

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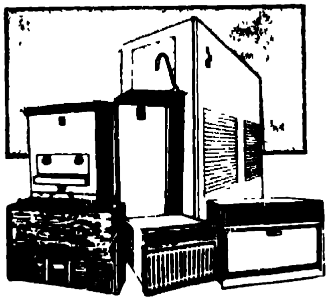

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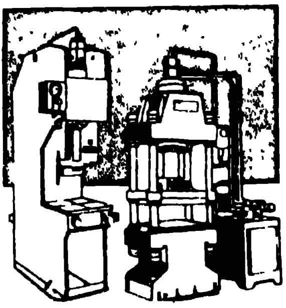

HYDRAULICS

■ Punch Press ■ Open Throat Press ■ Mobile Fabricator ■ Notcher Bender ■ Plastic Moulding Press ■ Guillotine Cutter ■ Marking Press ■ Bench Press ■ Cluster Press ■ Bus Bar Bender ■ Power Unit ■ Manual Bench Press from 10 Ton capacity onwards ■ Presses for forging, deep-drawing, embossing, stacking and coining ■ Other customised jobs

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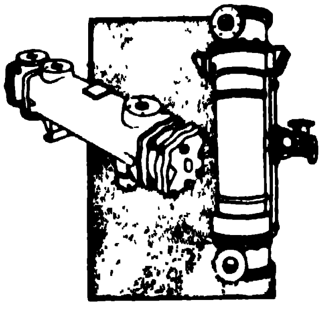

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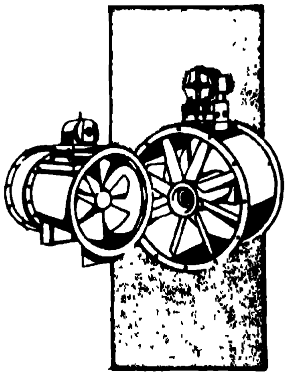
■ Heavy duty Centrifugal Fans ■ Low HP Centrifugal Fans ■ Industrial Exhausters ■ Turbo Pressure Blowers ■ Axial Airfoil Fans ■ Airfoil and Flat Blade Fans ■ Other custom made equipment ■ Allied climatic control systems



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industrial field. The Policy Resolution of 1948 emphasised the importance of the economy for securing a continuous increase in production and equitable distribution and had laid emphasis on states programmes by their active role in the development of industries. The revised policy of 1956 gave a more precise direction towards accelerating the rate of economic growth and speeding up the industrialisation in particular expanding the public sector and building up a large and growing cooperative sector. The Policy laid emphasis on the State assuming a predominant and direct responsibility for setting up new industrial undertakings and at the same time allowing private sector to develop and expand.

In pursuance of this objective as well as the need for planned development, it has been laid down that the industries which are of basic and strategic importance or in the nature of public utility services, should be in the public sector. Other industries which are essential and require investment on a scale which only the State could provide, have also to be in the public sector. Accordingly, the Government had decided to classify industries into three categories, having regard to the part which the State would play in each of them. In the first category are industries the future development of which will be the exclusive responsibility of the State. The second category consists of industries which will be progressively State-owned and in which the State will generally take the initiative to establish new undertakings, but in which private enterprise will also be expected to supplement the effort of the State The third category includes all the remaining industries and their future development has been left to the initiative and enterprise of the private sector.

Seventeen groups of industries have been included in Schedule 'A' and twelve in Schedule 'B'. The rest of groups of industries come under the third category.

Schedule A Industries: (1) Arms and ammunition and allied items of defence equipment; (2) Atomic energy; (3) Iron and steel; (4) Heavy castings and forgings of iron and steel; (5) Heavy plant and machinery required for iron and steel production, for mining, for machine tool manufacture and for such other basic industries as may be specified by the Central government; (6) Heavy electrical plants including large hydraulic and steam turbines; (7) Coal lignite; (8) Mineral oils; (9) Mining of iron ore, manganese ore, chrome ore, gypsum, sulphur, gold and diamond; (10) Mining and processing of copper, lead, zinc, tin, molybdenum and wolfram; (11) Minerals specified in the Schedule to the Atomic Energy (Control of Production Use) Order,1953; (12) Aircraft; (13) Air transport; (14) Railway transport; (15) Ship-building; (16) Telephones and telephone cables, telegraph and wireless apparatus (excluding radio receiving sets), and (17) Generation and distribution of electricity.

Schedule 'B' Industries: (1) All other minerals except "minor minerals" as defined in Section 3 of the Minerals Concession Rules, 1949; (2) Aluminium and other non-ferrous metals not included in Schedule 'A'; (3) Machine tools; (4) Ferro-alloys and tool steels; (5) Basic and intermediate products required by chemical industries such as the manufacture of drugs, dyestuffs and plastics; (6)

Antibiotics and other essential drugs; (7) Fertilisers; (8) Synthetic rubber; (9) Carbonisation of coal; (10) Chemical pulp; (11) Road transport, and (12) Sea transport.

While these tests have been drawn up by the Government, the Resolution permits a certain degree of flexibility and overlapping. Expansion of existing privately-owned units in industries in the first category or the possibility of State securing cooperation of private enterprise in establishment of new units when the national interest so requires are not ruled out. Similarly private enterprise will also have the opportunity to develop in this field either on its own or with State participation. This Resolution continues to provide the basic framework of the industrial policy of the Government.

REGULATION OF INDUSTRY

The Constitution demarcates the legislative powers between the Union and the states in relation to industries. In the Union List are those 'industries declared by Parliament by law to be necessary for the purpose of defence or prosecution of war' and 'industries, control of which by the Union is declared by Parliament by law to be expedient in the public interest.' In keeping with the distribution of legislative powers under the Constitution, the Industries Development and Regulation Act was placed on the statute book in 1951. The statute provides the legislative framework for implementation of the Government's industrial policy, as it provides for the "development and regulation of certain industries".

Its principal objectives are to empower the Government to license the establishment of new industrial capacities, thus directing investments into desired channels of industrial activity in keeping with the national goal of development and also to regulate generally the location of industrial enterprise so as to secure balanced regional development. Industrial licensing has been thus a positive instrument of planned industrial development.

INDUSTRIAL LICENSING

The industrial licensing system has been subjected to detailed scrutiny from time to time by several high level bodies. While there have been suggestions for streamlining the licensing system and effecting further improvements with a view to removing irritants standing in the way of achieving rapid industrial growth, it has been recognised that it is a positive instrument for achieving planned development. The process of regulatory licensing extends to the industries listed in the First Schedule of the Act which now number over 170.

Based on the policy framework provided by the Industrial Policy Resolution of 1956 and several studies carried out in the implementation of the policy through the mechanism of industrial licensing, the Government had enumerated the Industrial Licensing Policy in 1970 and later in 1973. The policy statement of 1973 took note of the provisions of the Monopolies and Restrictive Trade Practices Act, 1969 (enacted to provide that the operation of economic system does not result in the concentration of economic power to the common detriment, etc.) and had consolidated the core industries of importance to the national economy in the future, industries having direct linkages with core industries and industries with a long export potential area of basic and strategic importance for the growth of the economy. A list of 19 groups of industries (commonly known as Appendix-I industries) which have now been increased to 31 industries was drawn up where larger houses as defined in the Monopolies and Restrictive Trade Practices (MRTP) Act of 1969 could participate and contribute to the establishment of industries, provided these are not reserved for the public sector or small scale sector. The large industrial houses were ordinarily excluded from the industries not included in the list except where the production was predominantly for exports. Foreign concerns and subsidiaries and branches of foreign companies were also eligible to participate in the industries specified in that list. The policy statement of 1973 sought to promote wherever feasible and appropriate, industries in the medium, small scale and ancillary sectors. It also liberalised certain aspects of the industrial licensing procedure such as raising the exemption limit of fixed assets of undertakings from Rs one crore to five crore for purposes of industrial licensing and reiterated the policy of reservation for the small scale sector.

The Industrial Policy Statement of 1980 which is based on the Resolution of 1956, has laid emphasis on the socio-economic objectives such as optimum utilisation of the installed capacity, higher productivity and employment generation, correction of the regional imbalances, strengthening of the agricultural base, promotion of oriented industries and economic federalism, consumer protection, etc. It has liberalised the industrial licensing procedure further in areas such as raising the limits of investment prescribed for small scale and ancillary units, endorsement of licenses to reflect their then existing production capacity, extension of the provision of automatic growth to more industries, streamlining of licensing procedures to cut out delays, pollution control and preservation of ecological balance, etc. The liberalisation of industrial licensing policy and procedures to achieve a rapid industrial growth is a continuing exercise and a number of steps have been taken during the past few months in this direction.

A scheme of broad-banding of industries has been allowed in respect of 35 groups of industries to allow them greater flexibility in production and ability to respond to the demands of the market. Thirty groups of industries including those producing 82 bulk drops/formulations have been delicensed for non-MRTP/FERA companies and 50 groups of industries for locations in Centrally-declared backward areas.

A scheme for re-endorsement of capacity has also been introduced to enable the undertakings to maximise their production by optimum utilisation of installed capacity. Under this scheme, licensed capacity is re-endorsed at higher levels based on capacity utilisation as well as modernisation. If the capacity utilisation is of the order of 80 per cent or more, the industrial licenses are re-endorsed by taking the best of the annual production achieved during the past five years and by adding 33-1/3 per cent thereof. This facility is available on an yearly basis during the Seventh Five Year Plan period. Re-endorsement of capacity up to 49 per cent of the licensed capacity is available to the undertakings taking up modernisation, renovation or replacement of plant and machinery.

A scheme of maximisation of industrial production has been recently introduced in which the maximum production achieved by an unit in any financial year between 1 April 1988 and 31 March 1990 would be re-endorsed in the license/registration certificate held by the undertaking. No restrictions apply to such re-endorsement except that the item is not reserved for small scale sector or it should be an industry included in Schedule IV or V of the exemption notification of 16 February 1973. The scheme is available to all companies including MRTP/FERA companies and for all items of manufacture. Minimum levels of economic capacity have been prescribed in respect of 73 industries. The existing units are automatically allowed to expand their capacities at these minimum economic levels.

The requirement of industrial licensing for non-MRTP/non-FERA companies has been dispensed with for projects in backward areas involving an investment of less than Rs 50 crore in fixed assets. Even for non-backward areas, the limit of investment in fixed assets by non-MRTP/non-FERA companies for the purpose of licensing has been raised from Rs 5 crore to Rs 15 crore. However, to discourage concentration of industries in or around big cities, certain distance restrictions have been imposed.

It has been decided to establish growth centres to provide best available infrastructural facilities like power, water, telecommunications and banking for industrialisation of backward areas. Each such growth centre would cost about Rs 25-30 crore. Besides, the Government of India and the state governments, the All India Financial Institutions would have to play an important role in their establishment. About 100 such centres are proposed to be developed during the next five years

With a view to encouraging industrial development of backward areas, the export obligations in respect of MRTP, FERA companies have been reduced. In the case of category 'A' districts (no industry districts/special regions), no export obligation will be imposed as against 30 per cent application earlier. In other backward areas (category 'B' comprising 54 districts and category 'C' comprising 112 districts), export obligation has been reduced to 25 per cent as against 50 per cent applicable earlier.

DEVELOPMENT OF INDUSTRIES

The history of organised industry in India may be traced to 1854 when the real beginning of the cotton mill industry was made in Bombay with predominantly Indian capital and enterprise. The foundations of jute industry were laid near Calcutta in 1855, mostly with foreign capital and enterprise. Coal-mining also progressed about this time. These were the only major industries which had developed substantially before the First World War. During and after the First and Second World Wars, a somewhat more liberal policy was adopted by the authorities, such as a discriminating protection policy, which gave impetus to industrial development. Several industries rapidly expanded and a number of new industries came up, such as, steel, sugar, cement, glass, industrial chemicals, soap, *vanaspati* and some branches of engineering. But their production was neither adequate in quantity for meeting even the low level of internal demand nor diversified in character.

PROGRESS DURING FIRST AND SECOND PLANS

During the First and Second Plans the growth and diversification of industry were remarkable particularly in the Second Plan. Three new steel plants, each of 10 lakh ingot tonnes capacity, were set up in the public sector and the capacity of the two existing steel works in the private sector was doubled. Foundations were laid of heavy electrical and heavy machine tool industries and heavy machine building and other branches of heavy engineering industries. The production of machinery for cement and paper industries was started for the first time. In chemical industries, the advance was on a wide front, leading not only to large units and greatly increased output of basic chemicals, such as, nitrogenous fertilisers, caustic soda, soda ash and sulphuric acid, but also in the manufacture of a number of new products like urea, ammonium phosphate, penicillin, synthetic fibres, industrial explosives, polythylene and dyestuffs. The output of many other industries, like bicycles, sewing machines, telephone and electrical goods, increased substantially. New skills were learnt by the workers and a large and growing class of industrial managers came into being. Organised industrial production practically doubled in these ten years; the index of industrial production rose from 100 in 1950-51 to 194 in 1960-61. New industrial townships and factories sprang up in the environs of the main cities of the country.

PROGRESS DURING THIRD PLAN AND ANNUAL PLANS

Industrial progress was markedly uneven during the eight years which comprised the Third Plan and the subsequent Annual Plans. In the first four years, conditions were relatively favourable for industrial investment and growth and the progress achieved was significant. Thereafter, for nearly three years the economy was subjected to considerable stress and strain and the growth rate in industrial production declined, first slowly and then steeply, till it reached virtual stagnation. But in the last year of this period, 1968-69, there were distinct signs of recovery.

The decline after 1964-65 was attributable to several factors, of which the most important were the series of dislocations caused by the hostilities in 1965 and two successive droughts in 1965-66 and 1966-67. Many industries were severely affected by the shortage of raw materials and components arising from the pause in external aid in 1965.

Among industries in which Third Plan production targets were fully or nearly realised by 1965-66 were aluminium, automobiles, electric transformers, cotton textile machinery, machine tools, sugar, jute, textiles, power-driven pumps, diesel engines and petroleum products. On the other hand, in some of the important industries like steel and fertilisers, there was a considerable shortfall in production. In subsequent years, there was a step-up in production in certain industries, such as, fertilisers, heavy chemicals, cement and petroleum products. In spite of this uneven performance, significant achievements contributing towards the realisation of diversified industrial structure were made during this period. Substantial capacity was created in many new lines. Several of the large projects launched at the commencement of the Third Plan were completed and brought into production. In particular, in the field of heavy engineering and different units in the Heavy Engineering Corporation, Mining and Allied Machinery Corporation and of heavy electrical projects made it possible, largely through indigenous efforts, the expansion of further capacity in vital sectors like iron and steel, mining and power generation. In the field of rail and road transport and communications, virtual self-sufficiency for the supply of equipment and rolling stock was achieved. Machinery manufacturing capacity for a variety of traditional industries like textiles, sugar and cement was developed and designed and engineering capabilities were expanded. Process technology was either acquired or developed to enable the planning, designing and construction of industrial projects with maximum indigenous efforts in fields like fertilisers, rayons and dissolving pulp. There was an appreciable increase in the production capacity of steel and non-ferrous metals. Progress was made in the expansion of capacity in petroleum, fertiliser and petro-chemical industries.

PROGRESS DURING FOURTH PLAN

In the Fourth Plan, the performance of the industrial sector fell short of expectations both in terms of production and investment. The investment of industrial development in the public sector was estimated to be about Rs 2,700 crore as against the provision of Rs 3,050 crore. While the pace of investment in some of the sectors like iron ore, petroleum and petro-chemicals was generally satisfactory, this was not so in respect of other sectors like iron and steel, non-ferrous metals, fertilisers and coal. In fact, the shortfall in overall investment was much larger, if account was taken of the escalation in project costs.

A number of factors were responsible for the unsatisfactory growth in industrial production. While in some of the critical industries like steel and fertilisers, production remained substantially below the installed capacity on account of operational problems in different units, other agro-based industries like sugar and textile showed an erratic trend. The inadequate pace of investment resulted in a reduced demand for industrial machinery, adversely affecting the level of output of the capital goods industries. Production in other engineering industries was also hit by the shortage of steel and non-ferrous metals.

On the positive side, there was a substantial production increase in several industries like alloys and special steels, aluminium, automobile tyres, petroleum refinery products, electronics, machine tools, tractors and heavy electrical equipment. The production in the public sector undertakings also showed an encouraging rise towards the closing years of the Fourth Plan. Apart from this, the industrial base was further expanded and a greater degree of sophistication and self-reliance achieved.

PROGRESS DURING FIFTH PLAN

The Fifth Plan laid emphasis on rapid growth of core sector industries and increase in the production of export-oriented goods and articles of mass consumption. The average rate of growth of industrial sector was estimated at seven per cent per annum in the revised Plan. The sharp increase in the prices of foodgrains, fertilisers and oil seriously upset the assumptions on which the Fifth Plan had been framed. These new developments also lent urgency to a time-bound programme of action in order to achieve a measure of self-reliance in food and energy. The successive Annual Plans had to be formulated on the basis of these considerations.

The Fifth Plan envisaged a total outlay of Rs 53,411 crore, comprising Rs 37,250 crore for public sector and Rs 16,161 crore for private sector, respectively. However, due to the emergence of an unprecedented inflationary situation as a result of a steep increase in oil prices in November 1973, the Plan had to be drastically modified in 1976. The revised Plan envisaged a total outlay of Rs 69,351 crore comprising Rs 42,303 crore for public sector and Rs 27,408 crore for the private sector respectively. The public sector outlay included Rs 3,000 crore as investment on inventories; the remaining public sector outlay of Rs 39,303 crore as current outlay.

Of the revised public sector outlay of Rs 39,303 crore during the Fifth Plan, the share of industries and minerals sector amounted to Rs 10,201 crore of the total outlay. The outlay for large and medium industries was Rs 9,691 crore and that of village and small industries Rs 510 crore.

PROGRESS DURING SIXTH PLAN

The Sixth Plan envisaged a total public sector plan outlay of Rs 97,500 crore. The overall outlay earmarked for large industries and minerals sector is Rs 20,407 crore including coal and petroleum. A major part of the outlay amounting to Rs 19,018 crore is in the Central sector and the balance of Rs 1,389 crore is for the state sector. Besides this, private sector investment during 1980-85 is estimated at Rs 30,323 crore. The outlay for village and small industries is Rs 1,780 crore.

Industrial policy during the Sixth Plan aimed at optimum utilisation of existing capacities, quantitative increase in output of consumer, intermediate, capital goods and improvement of productivity. It aims at an annual growth rate of eight per cent of industrial production during the five year period. As per the Index of Industrial Production, the average growth rate achieved during the Sixth Plan was 5.5 per cent per annum compound. The growth during the years was rather uneven—four per cent in 1980-81, 8.6 per cent in 1981-82, 3.9 per cent in 1982-83,5.3 per cent in 1983-84 and 5.8 per cent in 1984-85. It may however be mentioned that the above growth rates, as indicated by the Index of Industrial Production are generally of a lower order as compared to the actual growth in the overall manufacturing sector. The Index (base 1970= 100) has serious limitations in terms of inadequate coverage of newly emerging growth areas like electronics, petro-chemicals etc., which were virtually non-existent in 1970. The Index also does not reflect the high levels of growth in the small scale sector. A revised Index of Industrial Production (base 1980-81 = 100) has recently been readied. A review of performance of industries in the Sixth Plan reveals that targets of capacity creation have been achieved for industries like aluminium, zinc, lead, thermoplastics, petro-chemical intermediates, electrical equipment, automobiles and consumer durables. Production targets were achieved in industries like petroleum, machine tools, passenger cars, motor cycles and scooters, TV receivers, etc. However, shortfall in production was reported for coal, steel, non-ferrous metals, cement, drugs and pharmaceuticals, textiles, jute manufacture, commercial vehicles, railway wagons, sugar, etc.

Some of the major technology achievements of the Sixth Plan are : commissioning of 500 mw power generation unit, commencement of manufacture of 500 mw turbo generator and boiler, manufacture of fuel-efficient 800 cc passenger cars of contemporary technology of international level. In fertiliser sector, manufacture of 1,350 tonnes per day fertiliser plant has commenced. In steel sector fully indigenous 3,200 cubic metre blast furnace and seven metre tall coke oven battery and equipment are now manufactured in the country. Similarly large-sized heavy machinery for mining is now being manufactured, *e.g.*, long wall mining equipment, eight cubic metre hydraulic excavaters, etc.

In electronic industry, which has been identified as a 'sunrise industry' in the Seventh Plan, higher production level than targetted has been achieved in the Sixth Plan. Higher levels of technology have been achieved in fields like LSI/VLSI circuits, manufacture of eight and 16-bit micro computer chips, computers and micro processors, communication equipment, broadcasting and TV transmission equipment, micro electronics, electronic materials and components, etc.

SEVENTH PLAN

The Seventh Plan envisages a total public sector outlay of Rs 1,80,000 crore of which Rs 54,821.26 crore has been earmarked for energy sector, Rs 19,708.09 crore for large and medium industries and Rs 2,752.74 crore for village and small scale industries. Major portions of these outlays are for schemes/projects in the Central sector—57.4 per cent in the case of outlays for energy sector and 82.6 per cent in the case of industry and minerals sector including village and small scale industries.

In accordance with the guiding principle of the Seventh Plan, *viz.*, to achieve growth with social justice and improved productivity, the programmes and policies in the industrial sector would be oriented towards: (a) ensuring adequate supply of wage goods and consumer articles of mass consumption of acceptable quality and at reasonable prices; (b) maximising production for existing assets through restructuring of industry, improving productivity and technological upgradation; (c) development of 'sunrise' industries with high growth potential as well as of other industries with large domestic and export markets, so as to emerge as world leaders in them, and (d) evolving an integrated policy towards self-reliance in strategic fields and for creating employment opportunities for skilled and trained manpower.

The Seventh Plan has envisaged a growth rate of over eight per cent for the output of the industry sector. The first two years of the Plan witnessed an average annual growth rate of around 8.8 per cent.

PUBLIC SECTOR

For the purpose of planning and national accounting, public sector in India includes all activities funded out of Government's budget. In this sense, the size of public sector is indeed very large. It includes not only Government departments but also Government companies, whether in the Central or state sector, irrigation and power projects, railways, posts and telegraphs, ordnance factories and other departmental undertakings and banking, insurance, financial and other services.

In India, the process of industrialisation was launched as a deliberate policy in the early fifties and in pursuance of this policy, large investments have been made in building up capacity in a wide spectrum of industries in public sector. Over the last four decades, the growth of public sector enterprises has been phenomenal in terms of investment, production, profitability and the range of activities. At the end of 1986-87, the capital employed in the Central public sector alone stood at Rs 51,931 crore and the total sales turnover was Rs 69,016 crore. From only five enterprises in April 1951 with a total investment of Rs 29 crore, the number rose to 231 by March 1988 with an investment of Rs 71,299 crore. The public sector today employs about 23 lakh people including casual workers.

About 55 per cent of total investment in Central public enterprises is in steel, coal, minerals and metals, power and petoleum groups of enterprises. These public sector industries provide linkages to a host of other industries. The wide range of products and activities of Central public enterprises including making of steel, mining of coal and minerals, extraction and refining of crude oil, manufacture of heavy machinery, machine tools, instruments, heavy machine building equipment, heavy electronic equipment for thermal and hydel stations, transportation equipment, telecommunication equipment, ships, submarines, fertilisers, drugs and pharmaceuticals, petro-chemicals, cement, textiles and a few consumer items such as bread, newsprint, paper, footwear and contraceptives; operation of air, sea, river and road transport; operation in national-and international trade; consultancy, contract and construction services; inland and overseas telecommunication services; hotel and tourist services, etc.

As on 31 March 1988, there were 231 Central government public enterprises (excluding two financial institutions and nine enterprises with Central government investment but without responsibility for management). Of these, 154 enterprises were producing and selling goods, 60 were rendering services which were under operation. In addition, there are six insurance companies and six enterprises under formation as on 31 March 1987.

The number of enterprises and the investment in them since the commencement of the First Plan is shown in table 20.1.

TABLE 20.1 INVESTMENT IN PUBLIC SECTOR

	Total Investment (Rs in crore)	No. of enterprises
At the commencement of the First Five Year Plan 1 April 1951	29	5
At the commencement of the 2nd Five Year Plan 1 April 1956	81	21
At the commencement of the 3rd Five Year Plan 1 April 1961	953	48
At the end of the 3rd Five Year Plan 31 March 1966	2,415	74
At the commencement of the 4th Five Year Plan 1 April 1969	3,902	85
At the commencement of the 5th Five Year Plan 1 April 1974	6,237	122
At the end of the 5th Five Year Plan 31 April 1979	15,602	176
At the commencement of the 6th Five Year Plan 1 April 1980	18,225	185
As on 31 March 1981	21,102	186
As on 31 March 1982	24,916	205
As on 31 March 1983	30,038	209
As on 31 March 1984	35,394	214
At the commencement of the 7th Five Year Plan 1 April 1985	42,791	221
As on 31 March 1986	50,362	225
As on 31 March 1987	61,603	226
As on 31 March 1988	71,299	231

The table 20.2 shows investment in various cognate groups as at the end of 1985-86 and 1986-87 indicating their respective shares in the total investment.

TABLE 20.2 INVESTMENT IN COGNATE GROUPS

Sl. No.	Cognate Groups	Investment as at the end of (Rs crore)		Share in Total investment (per cent)	
		1986-87	1985-86	1986-87	1985-86
1.	Enterprises under Construction	4,027.63	4,764.32	6.54	9.46
2.	Enterprises producing Goods.				
(i)	Steel	6,912.59	6,763.19	11.22	13.43
(ii)	Minerals and Metals	6,747.21	3,637.06	10.95	7.22
(iii)	Coal	6,304.84	5,559.21	10.23	11.04
(iv)	Power	7,409.23	5,462.00	12.03	10.85
(v)	Petroleum	5,105.23	5,078.67	8.29	10.08
(vi)	Chemicals, Fertilisers and Pharmaceuticals	5,818.37	4,703.20	9.44	9.34
(vii)	Heavy Engineering	1,665.45	1,727.65	2.70	3.43
(viii)	Medium and Light Engineering	1,481.39	1,030.29	2.40	2.05
(ix)	Transportation Equipment	2,043.06	1,842.44	3.32	3.66
(x)	Consumer Goods	1,458.67	1,196.65	2.37	2.38
(xi)	Agro-based Products	51.93	45.56	0.08	0.09
(xii)	Textiles	1,478.31	1,233.44	2.41	2.44
	Total (2)	46,476.28	38,279.36	75.44	76.01
3.	Enterprises rendering Services				
(i)	Trading and Marketing Services	2,372.96	1,075.51	3.85	2.14
(ii)	Transportation Services	3,039.19	2,753.42	4.93	5.47
(iii)	Contract and Construction Services	469.26	402.58	0.76	0.80
(iv)	Industrial Development and Technical Consultancy Services	165.30	124.26	0.27	0.25
(v)	Development of Small Industries	73.02	64.15	0.12	0.13
(vi)	Tourist Services	115.41	108.03	0.19	0.21
(vii)	Financial Services	2,913.15	2,471.10	4.73	4.90
(viii)	Telecommunication Services	1,521.81		2.47	
(ix)	Companies registered under Section 25	255.52	200.40	0.42	0.39
	TOTAL (3)	10,925.62	7,199.45	17.74	14.29
4.	Insurance Companies	173.40	118.50	0.28	0.24
	GRAND TOTAL	61,602.93	50,361.63	100.00	100.00

The total turnover of 225 operating enterprises amounted to Rs 71,126 crore during 1987-88 as against Rs 69,016 crore in the previous year. The pattern of turnover in different cognate groups during 1985-86 and 1986-87 is given in table 20.3.

TABLE 20.3 TURNOVER IN COGNATE GROUPS

Sl. No.	Cognate groups	Gross Turnover (Rs crore)	
		1986-87	1985-86
(a)	Enterprises producing Goods		
1.	Steel	4,888.35	5,019.50
2.	Minerals and Metals	1,297.67	1,128.90
3.	Coal	3,468.78	3,000.46
4.	Power	706.26	577.09
5.	Petroleum	26,765.37	24,074.02
6.	Chemicals, Fertilisers and Pharmaceuticals	3,649.64	3,120.78
7.	Heavy Engineering	2,734.03	2,426.34
8.	Medium and Light Engineering	2,158.41	1,671.31
9.	Transportation Equipment	2,293.28	2,024.91
10.	Consumer Goods	729.00	608.31
11.	Agro-based Products	52.01	74.50
12.	Textiles	803.32	806.07
	TOTAL	49,546.12	44,532.19
(b)	Enterprises rendering Services:		
1.	Trading and Marketing	14,387.31	3,724.47
2.	Transportation Services	2,847.06	2,628.91
3.	Contracts and Construction	655.31	667.38
4.	Industrial Development and Technical Consultancy	346.53	343.54
5.	Development of Small Industries	37.69	27.31
6.	Tourist Services	110.15	94.98
7.	Financial Services	258.77	214.77
8.	Telecommunication Services	712.32	—
9.	Section 25 Companies	114.60	126.45
	TOTAL	19,469.74	17,827.81
	GRAND TOTAL	69,015.86	62,360.00

PERFORMANCE OF PUBLIC SECTOR

Table 20.4 presents a comparative analysis of the collective performance of the manufacturing and service group of enterprises separately for the year 1986-87 measured in terms of broad financial parameters.

From the performance appraisal of operating enterprises given in table 20.4, it may be noted that the overall net profit of public enterprises has during 1986-87, not only shown a substantial increase of Rs 596.64 crore or 50.89 per cent over the overall net profit earned during 1985-86, but has touched an all time high

TABLE 20.4 COLLECTIVE PERFORMANCE OF INDUSTRIES

(Rs crore)

Sl. No.	Details	Manufacturing/Production Enterprises		Service Enterprises		All Enterprises	
		1986-87	1985-86	1986-87	1985-86	1986-87	1985-86
1.	Number of Enterprises	154	153	60	58	214	211
2.	Investment	46,476.28	38,279.36	10,925.62	7,199.45	57,401.90	45,478.81
3.	Capital Employed	35,887.08	30,238.14	16,043.77	12,726.42	51,930.85	42,964.56
4.	Turnover/Sales (Gross)	49,546.12	44,532.19	19,469.74	17,827.81	69,015.86	62,360.00
5.	Percentage of Gross Sales to Capital Employed	138.06	147.27	121.35	140.08	132.90	145.14
6.	Value of Goods Produced/Services rendered	45,520.66	41,253.57	19.514.09	17,712.53	65,034.75	58,966.10
7.	Cost of Production/Services	44,034.56	40,164.49	19,433.47	17,856.33	63,468.03	58,020.82
8.	Gain/Loss from Operation (6-7)	1,486.10	1,089.08	80.62	(—)143.80	1,566.72	945.28
9.	Add other Income	1,183.18	892.96	345.44	334.42	1,528.62	1,227.38
10.	Profit or Loss before Tax (8+9)	2,669.28	1,982.04	426.06	190.62	3,095.34	2,172.66
	(a) Profit making enterprises	4,075.81	3,382.00	727.91	474.80	4,803.72	3,856.80
	(No. of enterprises)	(70)	(77)	(39)	(42)	(109)	(119)
	(b) Loss incurring enterprises	1,406.53	1,399.96	301.85	284.18	1,708.38	1,684.14
	(No. of enterprises)	(81)	(75)	(19)	(15)	(100)	(90)
	(c) No. of enterprises neither making profit nor loss	(3)	(1)	(2)	(1)	(5)	(2)
11.	Interest Charged	2,004 38	1,791.58	1,411.93	1,323.04	3,416.31	3,114.62
12.	Provision for Tax	1,116.69	884.47	209.57	115.75	1,326.96	1,000.22
13.	Gross Profit (10+11)	4,673.66	3,773.62	1,837.99	1,513.66	6,511.65	5,287.28
14.	Percentage of Gross Profit to Capital Employed	13.02	12.48	11.46	11.89	12.54	12.31
15.	Net Profit/Loss after Tax (10—12)	1,552.59	1,097.57	216.49	74.87	1,769.08	1,172.44
16.	Dividend Declared	183.95	172.25	28.56	19.01	212.51	191.26
17.	Value Added	15,159.70	13,117.15	—	—	15,159.70	13,117.15
18.	Export Earnings	998.86	1,268.60	2,942.92	2,553.72	3,941.78	3,822.32
19.	Number of Employees including casual employees (Lakh)	19.34	19.18	3.55	2.88	22.89	22.06
20.	Number of Casual Employees (Lakh)	0.54	0.49	0.29	0.11	0.83	0.60
21.	Average annual per capita Emoluments (Rupees)	28,187	24,819	32,947	33,228	28,891	25,906

figure of Rs 1,769.08 crore. The ratio of gross profit to capital employed has also increased, though marginally, despite an increase of Rs 8,966.29 crore in the quantum of capital employed during 1986-87. Pre-tax profits earned by the profit making enterprises have shown marked improvement from Rs 3,856.80 crore in 1985-86 to Rs 4,803.72 crore in 1986-87 *viz.*, by Rs 946.92 crore or 24.55 per cent. On the other hand, total loss incurred by loss—prone enterprises increased marginally *i.e.*, from Rs 1,684.14 crore in 1985-86 to Rs 1,708.38 crore in 1986-87 *i.e.*, by Rs 24.24 crore or 1.44 per cent. A more distinguishing feature of this improved performance is that the upswing has come about notwithstanding increase in interest and depreciation charges during 1986-87 to the extent of Rs 700.59 crore.

In the context of the balance of payment position of the country, public sector is called upon to play a major role in easing the position. The value of foreign exchange earned by the Central public sector undertakings during 1986-87 was Rs 3,942 crore. Out of this, foreign exchange earned by the public enterprises rendering services like operation of air transport, shipping, telecommunications etc., amounted to Rs 1,438 crore. Some of the products exported were minerals, industrial boilers, petroleum products, electronic instrument, machine tools, handicrafts, pig iron, rail coaches, steel and power station equipment, etc.

The gross internal resources generated by the public enterprises during the Sixth Plan period from 1980-81 to 1984-85 was Rs 13,768 crore. During the first two years of the Seventh Plan, the gross internal resources generated by the public enterprises amounted to Rs 11,165 crore. The contribution to the public exchequer in the form of dividends, corporate tax, excise duty, customs duty, etc., during the year 1986-87 amounted to Rs 11,986 crore.

The Central public enterprises employed a total of 22.94 lakh persons (including casual employees) as on 31 March 1987. The average per capita annual emoluments in the public enterprises was Rs 28,887 in 1986-87 as against Rs 25,887 in 1985-86.

Public sector enterprises are paying increased attention to research and development activities specially with a view to improving their technological back-up. Expenditure on research and development went up to Rs 178.23 crore in 1986-87 against Rs 149.05 crore in 1985-86, thereby registering an increase of Rs 29.18 crore or 19.58 per cent.

INDUSTRIAL PRODUCTION

Production of selected industries since 1950-51 is given in table 20.5.

The Index of Industrial Production (base 1980-81 = 100) during 1987-88 increased by 7.7 per cent over 1986-87. The mining and quarrying sector showed an increase of 3.5 per cent, manufacturing sector 8.5 per cent and electricity generation 7.6 per cent.

The detailed industry-groupwise figures are available up to February 1988 which show that during April-February 1987-88 over April-February 1986-87,

TABLE 20.5 PROGRESS OF INDUSTRIAL PRODUCTION (SELECTED INDUSTRIES)

Industry (Units)	1950-51	1960-61	1970-71	1980-81	1985-86	1986-87	1987-88(P)
I. MINING							
1. Coal (inc. lignite) (lakh tonnes)	328	557	763	1,180	1,615	1,744	1,899
2. Iron Ore (lakh tonnes)	30	110	325	422	477	527	486
II. METALLURGICAL INDUSTRIES							
3. Pig Iron (lakh tonnes)	16.9	43.1	69.9	95.5	100.4	104.4	108.7
4. Steel Ingots (lakh tonnes)[2]	314.7	34.2	61.4	103.3	90.6	90.9	97.6
5. Saleable Steel (lakh tonnes)	10.4	23.9	44.8	62.8	77.7	82.2	85.9
6. Steel Castings (th. tonnes)	—	34	62	71	93	104.8	311.10
7. Aluminium (virgin metal) (th. tonnes)	4	18.3	168.8	199.0	251.5	257.3	277.7
8. Blister Copper (virgin metal) (th. tonnes)	7.1	8.5	9.3	25.3	33.6	38.0	33.9
III. MECHANICAL ENGINEERING INDUSTRIES							
9. Machine Tools (Rs crore)	0.3	7	43.0	196.2	291.4	433.84	468.48
10. Railway Wagons (th. nos.)[4]	2.9	11.9	11.1	13.6	13.10	15.2	15.8
11. Automobiles (th. nos.)	16.5	55.0	87.9	121.1	219.3		
(i) Commercial Vehicles (th. nos.)[6]	8.6	28.4	41.2	71.7	103.0	106.0	119.6
(ii) Passenger Cars, Jeeps, and Land Rovers (th nos.)	7.9	26.6	46.7	49.4	116.3	129.8	171.5
12. Power Driven Pumps (th. nos.)	35	109	259	431.0	512.2	459.4	515.8
13. Motor Cycles and Scooters (th. nos.)	—	19.4	97.0	317.1	732.3	1,434.6	1,541.0
14. Diesel Engines (th. nos.)	5.5	44.7	65.0	173.9	183.9	2,235.70	2,091.00
15. Bicycles (th. nos.)	99	1,071	2,042	4,189	5,553	6,118.6	6,675.9
16. Sewing Machines (th. nos.)	33	303	235	335	291	377.1	327.0
IV. ELECTRICAL ENGINEERING INDUSTRIES							
17. Power Transformers (lakh KVA)	1.8	41.1	80.9	194.6	272.5	282.5	247.3
18. Electrical Motors (th. HP)	99	729	2,721	4,060	5,250	5,430	3,940
19. Electrical Fans (lakh nos.)	2	10.6	17.2	41.8	52.0	52.6	44.5
20. Electrical Lamps (lakh nos.)	140	435	1,193	1,981	2,707	2,836.8	2,566.2

TABLE 20.5 (Continued)

Industry (Units)	1950-51	1960-61	1970-71	1980-81	1985-86	1986-87	1987-88(P)
21. Radio Receivers (th. nos.)	54	252	1,704	1,734	1,161	1,249	882
22. Electrical Cables and Wire Aluminium Conductors (th. tonnes)	1.7	23.6	64.2	86.0	61.1	58.0	41.0
V. CHEMICALS AND ALLIED INDUSTRIES							
23. Nitrogenous Fertilisers-N (th. tonnes)	9	98	830	2,164	4,328	5,410	5,466
24. Phosphatic Fertiliser-P205 (th. tonnes)	9	52	229	842	1,417	1,660	1,665
25. Sulphuric Acid (th. tonnes)	101	368	1,053	—	—		
26. Soda Ash (th. tonnes)	45	152	449	563	849	912	956
27. Caustic Soda (th. tonnes)	12	101	371	578	727	764	958
28. Paper & Paper Board (th. tonnes)	116	350	755	1149	1,517	1,890.90	1,997.90
29. Rubber Tyres							
i) Auto Tyres (lakh nos.)	8.7	14.4	37.9	79.7	123.4		
ii) Bicycle Tyres (lakh nos.)	33	111.5	192.0	270.0	362.0	297.0	235.9
30. Cement (lakh tonnes)	27.3	79.7	143.0	187.0	330.0	366.0	393.0
31. Refractories (th. tonnes)	237	567	683	—	—	—	—
32. Petroleum Refinery Products (lakh tonnes)	2	58	171	241	399	425	443.8
VI. TEXTILES INDUSTRIES							
33. Jute Textiles (th. tonnes)	837	1097	1,060	1,392	1,350	1,393.1	1,194.9
34. Cotton Yarn (crore kgs)[7]	53.4	80.1	101.6	129.8	147.3	152.6	155.5
35. Cotton Cloth (crore mtrs.)[8]	421.5	637.8	777.2	963.8	1,249.9	1,298.7	1,309.4
i) Mill Sector (crore mtrs.)	340.1	463.9	416.2	416.4	337.7	331.6	302.7
ii) Decentralised Sector (crore mtrs.)	81.4	208.9	361.0	547.4	912.2	967.1	1,006.7
36. Rayon Yarn (th. tonnes)	2.1	43.8	100.0	126.0	—	—	—
37. Art Silk Fabrics (crore mtrs.)	28.7	54.4	94.7	—	—	—	—

TABLE 20.5 (Continued)

Industry (Units)	1950-51	1960-61	1970-71	1980-81	1985-86	1986-87	1987-88(P)
38. Woollen Manufactures							
i) Woollen and Worsted Fabrics (lakh kgs.)[9]	87	130	197	—	—	—	—
ii) Woollen and Worsted Fabrics (lakh mtrs.)[10]	61	133	143	—	—	—	—
VII. FOOD INDUSTRIES							
39. Sugar (Oct.-Sept.) (lakh tonnes)	11.3	30.3	37.4	51.48	69.9	85.0	
40. Tea (crore kgs.)	27.7	32.2	42.3	56.8	64.8	62.9	67.3
41. Coffee (th. tonnes)	21.0	54.1	71.4	139.5	141.6	143.0	158.5
42. Vanaspati (th. tonnes)	170.0	340	558	753	868	918	980
VIII. ELECTRICITY GENERATED (crore kwh)	530	1,690	5,580	11,080	17,004	18,761	20.175

1. Excludes output in Goa up to 1969-70.
2. In terms of steel up to 1970-71.
3. In terms of finished steel up to 1970-71.
4. Excludes output in railway workshops.
5. Includes land rovers, jeeps, utilities, station wagons and vans.
6. Includes buses, trucks, tempos and three and four wheelers.
7. Includes mixed/blended and cent per cent non-cotton yarn from 1970-71.
8. Includes blended/mixed cotton cloth from 1970-71 onward.
9. Includes viscose yarn, staple fibre and acetate yarn.
10. Figures are for calender year from 1977.
11. Relates to public utilities only.

(P) Provisional.

@ Data includes production of small scale sector.

electrical machinery increased by 32.1 per cent, chemicals and chemical products by 14.6 per cent, other manufactured products by 17.5 per cent, basic metals by 8 per cent, cotton textiles by 6.4 per cent and transport equipment by 5.2 per cent. The groupwise index numbers (base 1980-81 = 100) for 1981-82 to 1986-87 and April-February 1987-88 are given in table 20.6.

PRINCIPAL INDUSTRIES

TEXTILES

The origin of cotton textile industry, the largest single industry in the country, dates back to 1818 when the first cotton textile mill was established at Fort Gloster near Calcutta. The Indian textile industry is complex in its structure, with hand-spun, hand-woven khadi sector at one end, the sophisticated capital-intensive high speed operations on the other. The intermediate segment consists of highly labour-intensive handlooms and medium scale operations of the powerlooms. Even in the processing sector, there are hand and power operated machines with separate identities. There was a total number of 1,035 textile mills in the country at the end of March 1988 of which 752 were pure spinning mills and 283 composite mills.

The programme for the development of textile industry during the Seventh Plan is guided by the Textile Policy introduced in June 1985. The policy, *inter-alia,* emphasises the multi-fibre approach for the harmonious growth of all sectors of the industry. The target of cloth and yarn production was placed at 1,450 crore metres and 154.2 crore kg respectively, to be achieved by the terminal year 1989-90 of the Plan period. As against this, the total production of cloth in the textile industry as a whole during 1986-87 and 1987-88 was 1,298.8 crore metres and 1,299.2 crore metres. Against the yarn production target of 154.2 crore kg, the achievement was 152.6 crore kg and 155.5 crore kg during 1986-87 and 1987-88 respectively.

The bulk of the country's textile production comes from the unorganised and decentralised sector. The level of cloth production in the decentralised sector in 1986-87 was 967.1 crore metres of which 344.9 crore metres was from handloom sector and 622.2 crore metres from powerloom sector. During 1987-88, total production of cloth in the decentralised sector was estimated at 996.5 crore metres of which the handloom and powerloom sectors accounted for 350.8 crore metres and 645.7 crore metres respectively.

HANDLOOM SECTOR

Handloom sector has been given very high importance both in the national textile policy as also in the Plan documents. The industry provides employment to more than 100 lakh people in the decentralised sector next only to agriculture. In accordance with the textile policy of June 1985 of the Government of India in enlarging the cooperatives in order to provide organisational infrastructure,

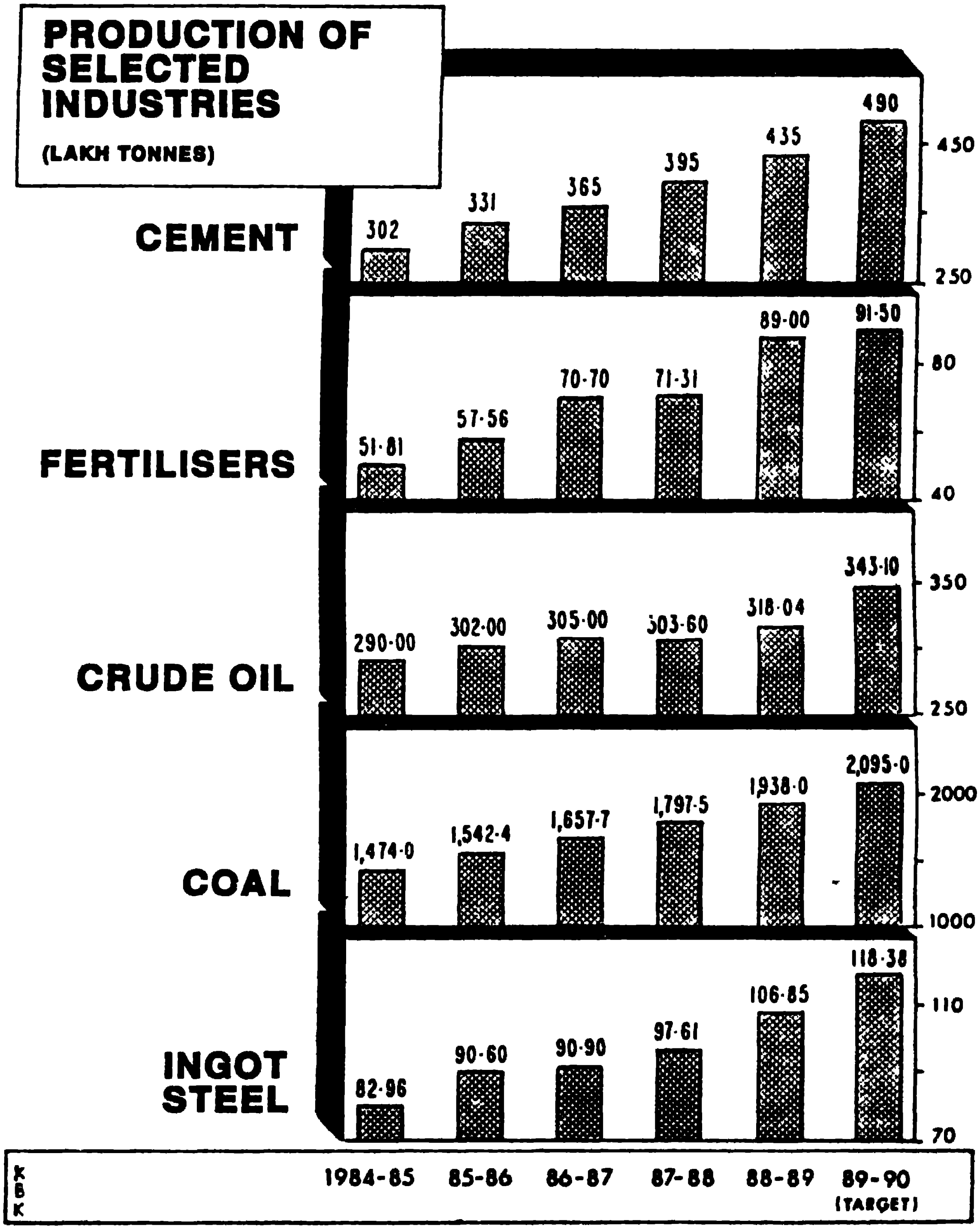
PRODUCTION OF SELECTED INDUSTRIES
(LAKH TONNES)
CEMENT
302
331
365
395
435
490
450
250
FERTILISERS
51·81
57·56
70·70
71·31
89·00
91·50
80
40
CRUDE OIL
290·00
302·00
305·00
303·60
318·04
343·10
350
250
COAL
1,474·0
1,542·4
1,657·7
1,797·5
1938·0
2,095·0
2000
1000
INGOT STEEL
82·96
90·60
90·90
97·61
106·85
118·38
110
70
KBK
1984-85
85-86
86-87
87-88
88-89
89-90
(TARGET)

TABLE 20.6 INDEX OF INDUSTRIAL PRODUCTION

Industry/Group	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	April-February		
							1986-87	1987-88	Percentage change Apr.-Feb. 1987-88 1986-87
General Index	109.3	112.8	120.4	130.7	142.1	155.1	152.0	164.4	8.1
Mining	117.7	132.3	147.8	160.8	167.5	177.9	173.0	180.9	4.6
Electricity	110.2	116.5	125.4	140.4	152.4	168.1	166.7	179.7	7.8
Manufacturing	107.9	109.4	115.6	124.8	136.9	149.7	146.7	159.7	8.8
Food Products	113.5	129.5	121.1	120.0	125.6	133.2	128.0	132.9	3.8
Beverages	104.3	107.8	104.5	111.7	112.1	98.5	98.7	84.6	− 14.3
Cotton Textiles	99.7	89.4	100.2	102.2	110.4	112.5	111.0	118.1	6.4
Jute, Hemp and Mesta Textiles	95.7	92.9	78.2	99.4	97.2	101.1	100.6	90.7	− 9.8
Textile Products (incl. Wearing Apparel)	96.7	96.3	92.1	95.6	112.8	87.1	90.0	89.4	− 0.7
Wood and Wood Products	153.2	153.0	167.5	216.5	223.2	246.1	250.2	160.9	− 35.7
Paper and Paper Products	108.2	105.5	109.3	131.9	148.5	163.2	163.4	165.9	1.5
Leather and Leather Products	128.1	100.1	116.3	139.7	169.2	178.7	178.5	184.6	3.4
Rubber, Plastic, Petroleum Products	119.2	119.0	136.1	147.2	153.0	149.6	148.7	154.3	3.8
Chemical and Chemical Products	116.9	121.2	131.0	142.8	154.3	175.5	173.2	198.5	14.6
Non-Metallic Mineral Products	106.7	103.7	122.5	138.4	157.3	160.3	159.2	156.2	− 1.9
Basic Metal and Alloy Products	100.0	104.2	95.1	107.3	117.0	126.8	123.4	133.3	8.0
Metal Products except Machinery	94.6	89.9	88.1	105.0	114.7	124.5	124.0	128.5	3.6
Machinery and Machine Tools except Electrical Machinery	111.1	112.0	119.6	127.6	130.2	141.8	139.1	137.4	− 1.2
Electrical Machinery	103.9	115.9	143.1	148.8	200.6	254.7	242.3	320.2	32.1
Transport Equipment	108.1	111.3	123.4	131.6	135.8	144.8	140.6	147.9	5.2
Other Manufacturing Industries	149.2	155.0	104.6	122.8	152.7	235.4	228.7	268.7	17.5

coverage was estimated at around 12 lakh effective looms by end of 1987-88. Keeping in view the production target of 460 crore metres of cloth for the handloom sector to be achieved in the terminal year of the Seventh Plan, an achievement of 344.9 crore metres of cloth was made during 1986-87 against the target of 400 crore metres. Against the target of 425 crore metres in 1988-89, actual production was 259.7 crore metres (up to December 1988). In the field of export the handloom has registered a significant gain. The value of exports has increased from a level of Rs 11.6 crore during 1967-68 to Rs 391.81 crore and Rs 516.21 crore during 1986-87 and 1987-88 respectively.

JUTE

The first power-driven jute mill was established in India at Rishra near Calcutta in 1859. Thereafter, being an export-oriented industry, it made rapid progress. But the partition of the country in 1947 deprived the industry of its vital raw material. The production of raw material in 1947-48 fell to 16.5 lakh bales as against the pre-partition output of 65 to 70 lakh bales. During 1987-88, the production of jute was 108 lakh bales. Efforts are on to increase production by the end of Seventh Plan by undertaking agricultural programmes to increase per hectare productivity rather than increasing acreage.

The jute industry now employs about 2.5 lakh workers and supports 40 lakh farmers. The target of jute goods production in the terminal year of Seventh Plan was fixed at 16.25 lakh tonnes of which 9.5 lakh tonnes were to be consumed domestically and the remaining to be exported. The actual production of jute goods during 1986-87 was 13.94 lakh tonnes as against 13.52 lakh tonnes in the previous year. During 1987-88, it declined to a level of 11.95 lakh tonnes.

The industry has been facing crisis due to a number of factors like declining demand for carpet backing cloth in the export market, high cost of inputs, stiff competition in the export market and competition from synthetic substitutes both in the export market as well as in the internal market.

The demand for jute goods is estimated at 16.25 lakh tonnes by 1989-90 while domestic consumption is estimated at 13.55 lakh tonnes. Export has been projected to be 2.70 lakh tonnes. Measures are being taken to increase the yield of per hectare of land, the change of product-mix to make jute goods competitive with synthetics and to diversify the product range for ensuring economic viability of the industry. The value export of jute goods during 1986-87 was Rs 232 crore as against Rs 267 crore in the previous year. During 1987-88, exports of jute goods declined to Rs 226 crore.

There are 69 jute mills of which six belong to National Jute Manufacture Corporation (NJMC) under the Ministry of Textiles. The NJMC accounts for 12 per cent of the total production capacity. The Corporation has undertaken modernisation of five units for increased production. The research and development activities are being undertaken towards change in product-mix, diversification of product range, improvement in quality of products, reduction in cost and development of new products.

SUGAR

The sugar industry ranks second amongst the major agro-industries. There were 377 sugar factories in 1987 as against 138 during 1950-51. Of these 204 factories come under cooperative sector. The Government has announced on 12 December 1986 a policy for licensing of additional capacity in sugar industries during the Seventh Plan.

The broad guidelines to be followed for granting licenses for the establishment of new sugar factories and expansions in the existing units are: (i) the sectoral priorities followed during the Sixth Plan period would be followed during the Seventh Plan period also. This means that first priority would be accorded for the establishment of a new sugar factory in the cooperative sector followed by public sector. In areas where proposals from these two sectors are not received proposals from the private sector could be considered; (ii) the basic criterion for the establishment of a new sugar factory would be abundant availability of sugarcane in a compact area around the proposed factory site. Potential for further cane development would be an additional factor; (iii) to ensure supply of adequate quantity of sugarcane to the existing capacity as well as to meet the requirement of future expansion, no license would be granted for the establishment of a new sugar factory within a radius of 40 km of an existing unit; (iv) to take advantage of the economies of scales as well as facilitate incorporation of modern technology, subject to the availability of sugarcane, new units would be licensed for an initial capacity of 2,500 TCD as against the earlier 1,250 TCD. Expansion in the existing units would be allowed up to 3,500 TCD. Proposals for expansion of existing units up to a maximum of 5,000 TCD would be permitted, provided the entire additional requirement of sugarcane accrues through increased productivity and not by expansion of area, and (v) establishment of new sugar units in backward areas may be given priority subject to adequate cane availability and techno-economic feasibility.

Cess is being imposed on sugar produced in the country since 1 June 1982 under the Sugar Cess Act, 1982 for collection of funds to finance development of sugar industry. The Sugar Development Fund Act, 1982 was enforced from 1 June 1982 to finance these activities: (a) making loans for facilitating the rehabilitation/modernisation of any sugar factory or undertaking of any scheme for development of sugarcane in the factory areas; (b) making grants for the purpose of any reasearch project aimed at the development of sugar industry, and (c) defraying any other expenditure for the purpose of the Act.

The Act was amended in November 1982 so as to enable the Government to apply the Fund also for defraying expenditure for the purpose of building up and maintenance of buffer stocks of sugar with a view to stabilising the prices of sugar. The Fund consists of the amounts of cess on sugar collected as part of excise duty. Loans on soft terms for sugarcane development and modernisation and rehabilitation of sugar factories are now available from Sugar Development Fund.

Production of sugar during 1987-88 was 91.03 lakh tonnes. The capacity and production targets for 1989-90 are envisaged at 107 lakh tonnes and 102 lakh tonnes respectively. The output of sugarcane is projected to increase from 1,800 lakh tonnes in 1984-85 to 2,170 lakh tonnes in 1989-90. The consumption of sugar has gone up from 50 lakh tonnes in 1980-81 to 76 lakh tonnes in 1983-84 and is projected at 98 lakh tonnes in 1989-90.

CEMENT

Manufacture of cement was first started in Madras in 1904. There are about 144 cement factories in production with a total installed capacity of about 5.45 crore tonnes per annum as on June 1987. Total production of cement (all varieties) in 1986-87 was 3.65 crore tonnes as against 1.87 crore tonnes in 1980-81. Cement production was a mere 0.27 crore tonnes in 1950-51.

The policy of partial de-control which was introduced from 28 February 1982, coupled with promotional measures taken by the Government with regard to the cement industry in the late 1970s, acted as a catalyst in the growth of the cement industry. The installed capacity rose from 443.9 lakh tonnes as on 1 April 1986 to 537.5 lakh tonnes as on 1 April 1987. The cement production increased from 331.3 lakh tonnes in 1985-86 to 393 lakh tonnes in 1987-88. The target of cement production for 1988-89 has been fixed at 435 lakh tonnes.

In view of the easy availability of cement, no import has been authorised since the financial year 1986-87, except for certain special varieties of cement to meet specific demand from particular end users. Non-levy cement has been made free from price and distribution controls. Levy cement which is subject to price and distribution control is being gradually given up in order to ensure the growth of the industry. At present, levy obligation of various categories of cement units varies between 15 to 30 per cent of actual production. The retention price of levy cement has been increased from time to time to compensate the cement industry for increase in the input costs. In order to encourage the units to achieve greater capacity utilisation, a rebate of 25 per cent in normal levy obligation is given to the units for production in excess of cent per cent and up to 125 per cent of the installed capacity. New cement units commencing production on or after 1 April 1986 and those commencing production between 1 January 1982 and 31 March 1986, have been allowed rebate in excise duty to the extent of Rs 50 per tonne and Rs 20 per tonne respectively.

The cement industry, by and large, has taken steps for modernisation and upgradation of technology by conversion of wet process plants into semi-dry/dry process plants. The share of wet process kiln in the total installed capacity came down from 65 per cent in 1977 to 28 per cent in 1987 which has been due to installation of a large number of dry process kilns for a capacity of 280 lakh tonnes in the last 10 years. In order to minimise the loss of production on account of power cuts, the industry was asked to set up captive generating sets to meet their power requirements to the extent of 40 per cent. Units which have installed captive diesel generating sets after the stipulated date have been given special incentive by making appropriate adjustment in their levy obligation.

Mini cement plants which have achieved at least 80 per cent of the licensed capacity, have been permitted in June 1987, to expand their capacity up to 600 tonnes per day with the same kiln by installation of pre-calcinator/balancing equipment. They are kept free from levy obligation up to 300 TPD and beyond 300 TPD, they are subject to a levy obligation of only 15 per cent on the incremental production.

PAPER AND PAPER BOARD

The paper and paper board industry in the country is more than a century old. The industry was taken up for planned development in 1950-51 when there were 17 paper mills, with a total annual installed capacity of 1.30 lakh tonnes. Since then, with the rapid expansion of manufacturing capacity, the industry has made spectacular progress. As on 1 January 1988 there were 299 units with a total installed capacity of 28.5 lakh tonnes. The production of paper and paper board during 1987 was of the order of 16.89 lakh tonnes. The demand for major varieties of paper and paper board is fully met by the indigenous production.

NEWSPRINT

Until 1981, the National Newsprint and Paper Mills was the only unit in the country manufacturing newsprint. The mill which is in the Central public sector commenced production in 1955. During the period 1981 to 1987, three more newsprint mills were set up in the country, one in the Central public sector and two in the state sector. In addition, one paper mill in the private sector was recently permitted to manufacture newsprint. Thus, as on 1 January 1988, there were five mills in the country producing newsprint, with an annual installed capacity of 3 lakh tonnes. The production of newsprint during 1987-88 was of the order of 2.87 lakh tonnes. The demand for newsprint is met by indigenous production supplemented by imports.

CINE AND X-RAY PAPER

The Hindustan Photo Films Manufacturing Co. Limited was set up at Udhagamandalam in 1960 by the Government for manufacturing cine and x-ray roll, graphic arts and industrial x-ray films and photo paper. The Company has a total installed capacity (for integrated production as well as jumbo conversion) of 153.24 lakh sq mt.

STEEL

The beginning of iron and steel industry in India was in 1870 when the Bengal Iron Works Company (a forerunner of IISCO) set up its plant at Kulti in West Bengal. But the first efforts at large scale production got under way when Tata and Steel Co. (TISCO) was set up at Jamshedpur in 1907. This was followed by the establishment of the Indian Iron and Steel Co. (IISCO) at Burnpur in 1919. The first unit in the public sector now known as the Visvesvarayya Iron and Steel Works Ltd. started functioning at Bhadravati in 1923. After independence, the development of the steel industry was considered during the First Plan but it was only in the Second Plan that work started to set up three integrated steel projects each with 10 lakh ingot tonnes capacity at Bhilai, Durgapur and Rourkela. An expansion programme to double the capacity of the two private sector steel plants, namely TISCO and IISCO to 20 lakh tonnes and 10 lakh tonnes respectively was also taken in hand. The three plants in the public sector came into operation in stages between 1956 and 1962 and the expansion of the private sector factories was completed in 1959. In the Third Plan, the emphasis was on expansion of the three public sector steel plants and the setting up of new steel works at Bokaro. The Fourth Plan steel programme was based on the maximum utilisation of existing steel capacity and preparation of plans to set up three more steel plants at Salem in Tamil Nadu, Vijayanagar in Karnataka and Vishakhapatnam in Andhra Pradesh to create additional steel production capacity to meet the requirement in the Fifth Plan. However, it was only by the close of the Fifth Plan which terminated a year ahead of the schedule on 31 March 1978 that there was addition to steel making capacity of the order of 17 lakh tonnes with the completion of Stage I of the Bokaro Steel Plant. The total installed ingot steel capacity which stood at 89 lakh tonnes as on 31 March 1974 had increased to 106 lakh tonnes by 31 March 1978.

The management of IISCO was taken over by the Government on 14 July 1972 and the ownership of the company acquired on 17 July 1976 with a view to improving its working. The Bokaro Steel Plant and the Bhilai Steel Plant are presently being expanded to four lakh tonnes of crude steel capacity each. In Bokaro Steel Plant, most of the expansion units in the iron and steel making areas have been commissioned. In Bhilai Steel Plant, the expansion has been planned in two phases. All units in Phase I have been commissioned. The Alloy Steel Plant at Durgapur has a capacity to produce 1,60,000 tonnes of ingot steel of alloy and special steels. Its capacity is currently being expanded to 2,60,000 tonnes of crude steel by adopting the sophisticated VAD/VOD processes and continuous casting. The Salem Steel Plant at Salem has capacity to produce 32,000 tonnes of stainless steel sheets/coils. It started commercial production in March 1982. The plant is capable of producing sophisticated grades of stainless steel sheets/coils used in the industrial sector and kitchenware.

The capacity of steel plants after the completion of the expansion schemes under implementation at Bhilai, Bokaro and ASP has been shown at table 20.7.

STEEL AUTHORITY OF INDIA LIMITED

The Steel Authority of India Limited (SAIL) is a wholly owned Government undertaking. It is responsible for the management of the integrated steel plants at

TABLE 20.7 CAPACITY OF STEEL PLANTS

('000 tonnes)

Plant	RATED CAPACITY	
	Crude Steel	Saleable Steel
SAIL		
Bhilai	4,000	3,153
Durgapur	1,600	1,239
Rourkela	1,800	1,225
Bokaro	4,000	3,156
LISCO	1,000	800
TOTAL (INTEGRATED STEEL PLANTS)	12,400	9,573
Alloy Steel Plant	260	185
Salem Steel Plant	—	32

Bhilai, Durgapur, Rourkela, Bokaro and Burnpur and also of Alloy Steel Plants at Durgapur and Salem Steel Plant, Salem. SAIL has recently taken over Maharashtra Electrosmelt Limited, a mini steel plant producing ferro-manganese and steel. The Burnpur Steel Works are under Indian Iron and Steel Company, a wholly owned subsidiary of SAIL.

The authorised capital of the Company was Rs 5,000 crore and the paid-up capital was Rs 3,863.48 crore including the share money of Rs 9 crore pending allotment as on 31 March 1988. The gross turnover during 1987-88 was Rs 5,036.23 crore. The production of crude steel, saleable steel and pig iron for sale from the steel plants under SAIL and TISCO during 1984-85 and 1985-86 is shown in table 20.8.

MINI STEEL PLANTS

The electric arc furnace units, popularly known as mini steel plants produce steel based on steel scrap/sponge iron. These units constitute an important segment of the steel industry in the country. While the integrated steel plants mainly produce mild steel in bulk quantities, the mini steel plants produce mild as well as alloy steels which could not be economically produced by the integrated steel plants.

At present there are 196 mini steel plants with a total licensed capacity of over 65 lakh tonnes per annum, of which 161 units have been commissioned and have started commercial production. The other units are at various stages of implementation. Besides these units, there are some electric arc furnace units licensed for manufacture of castings which have been allowed to diversify their production into steel ingots.

TABLE 20.8 PRODUCTION OF IRON AND STEEL

('000 tonnes)

PLANT	Crude Steel			Saleable Steel			Saleable Pig Iron		
	1985-86	1986-87	1987-88	1985-86	1986-87	1987-88	1985-86	1986-87	1987-88
INTEGRATED STEEL PLANT									
SAIL									
1. **Bhilai**	2.345	2,230	2,471	2,055	2,150	2,173	388	314	202
2. **Durgapur**	875	922	936	724	751	835	143	153	179
3. **Rourkela**	1,177	1,100	1,114	1,005	1,140	1,156	30	60	97
4. **Bokaro**	2,003	2,056	2,418	1,720	1,744	1,968	502	642	641
5. **IISCO**	565	528	546	500	526	542	96	92	84
Total	6,965	6.836	7,485	6,004	6,311	6,674	1,159	1,261	1,203
TISCO	2,095	2,250	2,276	1,771	1,908	1,914	—	—	—
ASP	101[1]	140 4[1]	151.4[1]	60	82.02	89.24	—	—	—
SSP	—	—	—	24	26.63	31.43	—	—	—

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1. Liquid Steel.

VISHAKHAPATNAM STEEL PROJECT

Vishakhapatnam Steel Project is the first integrated steel project being set up in the southern region near the Vishakhapatnam port in Andhra Pradesh. Many modern technological features have been incorporated in the design of VSP, *e.g.*, seven metre tall coke oven batteries with dry quenching facilities, bigger blast furnace of 3,200 cubic metres, cent per cent continuous casting facilities, etc.

The annual capacity of the project is 30 lakh tonnes in terms of liquid steel. The cost of the project as originally approved by the Government is Rs 3,897.28 crore based on 1981 (fourth-quarter) prices. A number of project parameters have, however, undergone material changes over a period of time. As per the new concept known as the "Rationalised Concept" the revised cost of the project is estimated at Rs 6,281.32 crore (first-quarter 1986 prices).

SPONGE IRON

Sponge iron is mainly used as a substitute raw material for the steel scrap in mini steel plants. In view of the importance of utilising large non-coking coal reserve for steel making and for conserving coking coal resources, a special project was taken up at Kothagudam in Andhra Pradesh with UNDP assistance for production of sponge iron. The plant has established production of sponge iron with indigenous iron ore and non-coke coal. The capacity of the plant is being expanded from 30,000 tonnes per annum to 60,000 tonnes per annum. The expansion scheme has been completed and commercial production is on.

SALEM STEEL PLANT

Salem Steel Plant has the capacity to produce 32,000 tonnes of stainless steel sheets/coils. It started commercial production in March 1982. The Plant is capable of producing sophisticated grade of stainless steel sheets/coils for use in industrial sector.

METALLURGICAL AND ENGINEERING CONSULTANTS

Metallurgical and Engineering Consultants (India) Limited (MECON) is an autonomous company directly under the Ministry of Steel and Mines. Established in 1959 as Central Engineering and Design Bureau, a unit of the then Hindustan Steel Limited (HSL), MECON has now grown into one of the world's leading engineering and consultancy organisations rendering technical consultancy, design and engineering, design of equipment and systems and project management services for ferrous and non-ferrous metallurgical industries. In the iron and steel sector, MECON offers complete consultancy and engineering services as well as project management services right from concept to commissioning. The company also renders consultancy services in the field of non-ferrous metals, chemicals, refractories, power plants, general engineering, defence projects, pollution control, ocean engineering and cement industry.

In the area of equipment and systems design, MECON offers turnkey services for hot and cold rolling mills, processing and finishing lines for ferrous and non-ferrous metals, coke ovens, coal chemicals, cement and refractories, blast furnace equipment and gas cleaning plants through in-house engineering and research development and tie-up with world's leading firms. MECON also offers modernisation/revamping of existing plants and units to incorporate latest state-of-art technology compatible to the plant working environment.

FERTILISER

Three decades of planning and development of fertiliser industry has brought India to the frontline of fertiliser producing countries. India is today the fourth largest producer of nitrogenous fertilisers in the world. Fertiliser, being a key input for agricultural development, occupies a prestigious place in country's development strategy. As on 1 October 1987, there were 42 large fertiliser units producing a wide range of straight nitrogenous, complex and phosphatic fertilisers. Besides, there are about 70 small units producing single super phosphate and six units producing ammonium sulphate as by-product from steel plants.

The nitrogen production capacity has increased from a modest 85,000 tonnes in 1951-52 to 68.81 lakh tonnes as on 1 October 1987. The phosphatic fertiliser capacity has also increased from 63,000 tonnes in 1951-52 to 21.64 lakh tonnes of P_2O_5 in 1987-88. Against the nominal production of 16,000 tonnes of nitrogen and 11,000 tonnes of P_2O_5 in 1951-52, fertiliser production increased to 64.55 lakh tonnes of nitrogen and 22.69 lakh tonnes of phosphatic fertilisers in 1988-89.

Despite massive increase both in the capacity and production of fertilisers, substantial quantum of imports is required every year to meet the country's full requirement of fertilisers: Installation of additional fertiliser capacity is, therefore, receiving continued emphasis. An ambitious programme has been taken on hand to augment the indigenous production capcity. Six large-sized nitrogenous fertiliser plants based on the gas available off the west coast, are being set up in Vijaipur (MP), Bareilly, Babrala, Jagdishpur and Shahjahanpur (all in UP) and another one in Rajasthan. A naphtha based nitrogenous fertiliser plant is also to be established at Kakinada in Andhra Pradesh. Five new/expansion schemes for complex phosphatic fertilisers are also under implementation. Besides, licenses/letters of intent have been issued for setting up of additional phosphatic fertiliser capacity in the form of single super phosphate. After implementation of all the projects now on hand, the total fertiliser capacity is expected to be about 95 lakh tonnes of nitrogen and 29 lakh tonnes of P_2O_5. The Seventh Plan has laid down a capacity target of 92.53 lakh tonnes of nitrogen and 28.91 lakh tonnes of P_2O_5 by the end of the Plan period (1989-90).

The Government is controlling, statutorily, the selling prices of all fertilisers in order to make them available to the farmers at a uniform and reasonable rate throughout the country. However, in the process of supporting the selling prices of fertilisers, Government has been incurring massive amount of subsidy over the years. The amount of subsidy on indigenous fertilisers alone, has increased from Rs 275 crore in 1981-82 to Rs 1,700 crore in 1986-87. With a view to containing the subsidy on fertilisers, the Government increased the statutory selling prices on 31 January 1986. Even with this increase, however, the selling prices of fertilisers, today, are at the same level as they were five years ago.

The public sector engineering and technical consultancy organisations have made considerable progress in the acquisition/development of indigenous know-how for the chemical and fertiliser industry. These are: Projects and Development (India) Limited (PDIL), FACT Engineering and Design Organisation (FEDO) and Engineers India Ltd. (EIL). They have acquired capabilities for preparation of detailed feasibility studies, detailed engineering, procurement, erection and commissioning of plants.

Over the years, the country has developed a wide and diversified industrial base, geared especially to meet the specialised requirement of the fertiliser industry, *e.g.*, high pressure vessels, compressors, pumps, heat exchangers, etc.

PUBLIC UNDERTAKINGS

Public sector plays a dominant role in the fertiliser industry. The first State-owned fertiliser factory went into production in 1951 at Sindri in Bihar. The second plant was set up at Nangal in Punjab, for which the Nangal Fertilisers and Chemicals Limited was incorporated in February 1956. With the coming up of another fertiliser plant at Trombay, the Government decided to bring all the public sector fertiliser units under the management of a single undertaking and the Fertiliser Corporation of India Limited (FCI) was incorporated in January 1961. The National Fertilisers Limited was established on 23 August 1974 with an authorised capital of Rs 150 crore for the establishment of fertiliser plants in the north-western region. Thereafter, the Fertiliser Corporation of India and the National Fertilisers Limited were reorganised into four companies on the basis of feed-stock and geographical considerations from 1 April 1978.

The FCI has now four operating units, one each at Sindri, Gorakhpur, (Uttar Pradesh), Talcher (Orissa) and Ramagundam (Andhra Pradesh) with a total capacity of 8.06 lakh tonnes of nitrogen. Besides it has an organisation engaged in the mining of gypsum in Rajasthan known as the Jodhpur Mining Organisation.

The National Fertilisers Limited (NFL) has, at present, four operating units, *viz.*, the calcium ammonium nitrate plant at Nangal and the urea plants at Nangal, Bhatinda and Panipat. The Company is also implementing the Guna Fertiliser Plant in Madhya Pradesh. The Fertilisers and Chemicals Travancore Limited (FACT), Udyogamandal (Kerala), has at present three operating units, one at Udyogmandal and two at Cochin. The Company is also implementing the caprolactam project at Udyogamandal. Besides fertiliser, the Company is engaged in the manufacture of chemicals. Another division of the Company, FACT Engineering and Design Organisation (FEDO), is engaged in design, engineering, procurement, supervision of construction and commissioning of fertiliser/chemical plants.

The Rashtriya Chemicals and Fertilisers Limited is in charge of the Trombay plants and the large gas-based fertiliser plant at Thal which started commercial production in 1985. Apart from fertilisers, the Trombay plants produce a wide range of industrial products.

Hindustan Fertiliser Corporation Limited has three units in production and one project each under construction and commissioning. The operating units are at Namrup in Assam, Durgapur in West Bengal and Barauni in Bihar. Namrup-III project started production from 1 October 1987.

The Madras Fertilisers Limited is a joint venture wherein the Government holds 67.55 per cent of the equity share capital, the remaining 32.45 per cent being held by the National Iranian Oil Company.

The Pyrites, Phosphates and Chemicals Limited, which was set up in March 1960 to explore the pyrites deposits in the country, assumed independent status in September 1963. It is presently engaged in the exploration of pyrites deposits at Amjhor in Bihar, in exploration-cum-production mining of pyrites deposits at Saladipura in Rajasthan and in mining of rock phosphate ore from the Mussoorie phosphorite deposits. The pyrites are used as substitutes for sulphur in the manufacture of sulphuric acid and also as soil amendment material. The rock phosphate mined is powdered and supplied for direct application as a source of P_2O_5 in acidic soils.

Projects and Development India Limited (PDIL), formerly known as the Fertiliser (Planning and Development) India Limited, is engaged in the field of design, engineering, procurement and supervision of construction/commissioning of fertiliser and allied chemical plants. The company has played pioneering role in developing, entirely on its own initiative, the knowhow for manufacture of catalysts in India.

Paradeep Phosphates Limited (PPL) incorporated on 24 December 1981 with its registered office at Bhubaneshwar, is engaged in setting up of large phosphatic fertiliser project at Paradeep in Orissa at an estimated capital cost of Rs450 crore. Phase-I of the project has been commissioned in 1986 and production of Di-Ammonium Phosphates has started.

ENGINEERING INDUSTRIES

Over the years engineering industries in the country have registered a phenomenal growth to generate a strong base in a wide range of heavy and light engineering industries covering a broad spectrum of capital goods and consumer durable products. The bulk of the capital goods required for power projects, fertiliser plants, cement plants, steel plants, mining equipment, petro-chemical plants are being met from indigenous production. Construction machinery and equipment for irrigation projects, diesel engines, pumps and tractors for agriculture, transport vehicles, etc., are also being met from within the country. During the Sixth Plan a new era has been opened by the commissioning of the fuel-efficient small car project in the public sector. The establishment of this project has provided a stimulus to other automobile manufacturers to undertake modernisation of their plants to produce fuel-efficient vehicles with the latest technology. The engineering industries have also demonstrated their capacity to manufacture large size plant and equipment for various sectors such as power generation, fertilisers and cement. The main thrust of the Seventh Plan in the engineering industries is facilitating the adaptation and absorption of technologies and aims at a much closer linkage among the capital goods producers, user sectors and the consultancy organisations.

Besides new products development and technology upgradation as a part of normal growth of the engineering manufactures, the leading manufacturing organisations and research institutes are carrying out research programmes and work on the development of engineering sciences. The BHEL is carrying out research on coal gasification, electrical insulation, welding techniques and creep failure. Separate establishments to carry out research on combustion, applications of ceramics and pollution control are being established by BHEL. HMT will work on the development of control systems for NC/CNC machine tools, use of lasers in metal cutting and new techniques of metal forming. Separate establishments under HMT for horological machinery, bearings and graphic arts printing will carry out research in their respective fields. Central Machine Tools Institute will concentrate on robotics, flexible manufacturing systems, laser beam machining and precision engineering. The Automobile Research Association of India will implement research projects in automotive emmissions, automotive safety, advanced engines development, computer-aided engineering of automobiles, fatigue failure and track evaluation of vehicles. The resources generated through R and D cess on automobile industry will be utilised. A national project for developing the technology for High Voltage-Direct Current Transmission and the power equipment required for it within the country, is being implemented.

HEAVY ELECTRICAL INDUSTRY AND OTHER INDUSTRIAL MACHINERY SECTORS

A number of units in the public and private sectors are manufacturing steel plant equipment, mining equipment, process equipment for fertiliser chemicals, petrochemical and petroleum industries, transport equipment including wagons for railways and other mechanical equipment.

There are 151 units engaged in the manufacture of machine tools. The industry has registered a significant growth during the last three decades rising from a production level of just about Rs one crore in 1956 to over Rs 300 crore in 1985 and the average annual growth rate during the last decades has been about 15 per cent. The Hindustan Machine Tools Limited (HMT) is a major manufacturer of machine tools. The total production of machine tools from various plants of HMT during 1986-87 was Rs 433 crore. The Praga Tools Limited (PTL) manufactures a diverse range of machine tools-cutter and tools grinders, surface grinders, milling machines, copy lathes, thread rolling machines and drilling machines. Recently, through diversification programmes, the Company has added to its range of products the CNC matching centres, improved versions of thread rolling machines and toolings. The Company achieved a production of Rs 31.85 crore during 1986-87.

Twenty seven units are engaged in the manufacture of various metallurgical and steel plant equipment with Heavy Engineering Corporation Limited, Ranchi (incorporated in 1958) in the public sector as the leading unit.

There are seventeen units in the organised sector engaged in manufacturing of various items for mining machinery. The Mining and Allied Machinery Corporation and Jessop and Company, the public sector units, are the leading manufacturers of mining machinery.

Oil drilling and 'down the hole' equipment is part of oil field equipment which comprises a wide range of equipment falling in various groups of offshore platforms/structures, offshore/onshore drilling equipment pipes/tubes, electricals, instrumentation, transportation and conveying equipment, other drilling equipment, drilling accessories, etc. These items are required for oil/natural gas exploration and production. At present M/s Mazagon Dock Limited is the only company in the country which has developed the capability for the manufacture of jack-up rigs required for offshore drilling. As regards onshore drilling, M/s BHEL, Hyderabad is manufacturing various onshore drilling rigs. Another company M/s Triveni Engineering Works Limited is in the process of implementing the same.

There are 18 units engaged in the manufacture of various types and sizes of earth moving equipment, which are widely used in coal mining, land development and construction activities. Earth moving equipment currently being manufactured cover shovels, bulldozers, crawler tractors, dumpers, road rollers, loaders, scrapers, motor graders, excavators and drag-lines (including walking drag-lines).

There are 19 units in the country manufacturing transmission line towers with an annual installed capacity of 1,92,140 tonnes. In addition, further capacity to the extent of 1,12,000 tonnes has been licensed which is under various stages of implementation.

There are 31 licensed/registered units engaged in manufacturing of different types of cranes. Of these, 10 units have developed design and manufacturing capability with suitable tie-ups with reputed foreign crane manufacturers for meeting the requirement of heavy duty sophisticated, specialised cranes of different sectors, particularly those of ports and steel plants. Out of these units, five are in public sector. Installed/available manufacturing capacity for cranes, of the existing units, is estimated at 40,600 tonnes against a total lincesed capacity of 67,317 tonnes.

There are 14 wagon manufacturing companies of which four are in the public sector having an annual production capacity of 31,585 wagons (in terms of four wheelers). The public sector units are Burn Standard Company Limited, Braithwaite and Company, Jessop and Company and Bharat Wagon and Engineering Company Limited. The wagon production for the Seventh Plan has been targetted at 96,000 wagons.

There are four units in the organised sector for the manufacture of lifts and escalators. The present installed capacity of these units is 2,026 numbers per annum. Of these units, M/s OTIS Elevators is the largest manufacturer of lifts.

There are 15 machine makers engaged in the manufacture of complete jute machinery, in addition to 140 small scale units registered with the Jute Commissioner for the manufacture of spares, components and stores to meet the requirements of jute industry as well as the jute mill machinery manufacturing industry. Actual production of the jute machinery industry during 1985-86 was Rs 3.74 crore.

There are 32 industrial units engaged in manufacturing various types of paper plants and components thereof. Of these, seven are manufacturing major items of paper plants. There are 16 units in operation, licensed/registered to manufacture complete cement plants and components thereof. There are 15 industrial units in the organised sector manufacturing printing machines of various types. There are 18 units in the large and medium scale sector engaged in the manufacture of various types of air pollution control equipment.

Heavy electrical industry is in a position to meet the entire domestic demand and requisite capacity has been created in all areas. The industry has achieved self-sufficiency in major disciplines like engineering technology. The Bharat Heavy Electricals Limited (BHEL), a public sector undertaking, is the major producer of power generation equipment in the country. It has its manufacturing plants at Bhopal, Trichy, Hyderabad, Hardwar, Ranipet, Bangalore and Jagdishpur.

There are seven units in the organised sector manufacturing steam turbines. Of these, three are in publc sector, *viz.,* BHEL's Bhopal, Hardwar and Hyderabad units. BHEL's two units at Hardwar and Bhopal in the public sector and M/s Jyoti Ltd., Baroda, M/s. Larson and Toubro and M/s Flovel in the private sector are engaged in the manufacture of hydro turbines.

There are 31 units in the organised sector manufacturing power and distribution transformers. The capacity covered by industrial licenses is about 40,000 KVA annually. There is a large number of units in the small scale sector manufacturing mostly distribution transformers of small ratings. The industry was de-licensed in March 1985.

There are at present 144 units engaged in the manufacture of various types of switchgear, motor starters, circuit breakers, etc. This industry was de-licensed in March 1985.

There are 22 units in the organised sector for the manufacture of various types of boilers. The major manufacturers for power boilers and auxiliaries are M/s Bharat Heavy Electricals Ltd. and M/s ACC-Babcock. The total capacity available with these two units is of the order of 5,000 mw per annum.

AUTOMOBILE

There are 13 units licensed to manufacture light, medium and heavy duty commericial vehicles. The total installed/registered capacity in this sector was 2,64,500 numbers per year and the production during 1987-88 was about 1.2 lakh. The passenger car industry with five units and installed capacity of 2,30,600 numbers yearly, produced 1,38,240 cars during 1987-88. In the field of two wheelers, including motor cycles, scooters and mopeds, there are 23 units with an installed capacity of 23 lakh vehicles and an annually production of about 16 lakh as in 1987-88.

There are 19 units manufacturing agricultural tractors with total installed capacity of 1.15 lakh tractors per annum and five manufacturers of power tillers with a capacity of 31,000 numbers per year.

More than 250 units are engaged in the manufacture of automobile ancillaries in the organised sector and in addition, there is a large number of units in the small scale sector also. The production during 1987-88 was worth about Rs 910 crore.

At present eight units are on the rolls of the Directorate General of Technical Development engaged in the manufacture of bicycles. The total annual capacity of these units is 71.99 lakh and the output in 1987-88 was about 67 lakh bicycles.

SOAPS AND DETERGENTS

Fortyeight units in the organised sector are manufacturing soap with an installed capacity of 3,65,400 tonnes per annum. The production of soap in both the organised and small scale sector was about 14.7 lakh tonnes in 1987-88. There are 21 units in the organised sector for the manufacture of synthetic detergents with an installed capacity of 3,23,460 tonnes per annum. The production of detergents was about 1.72 lakh tonnes in 1987-88.

There are seven units engaged in the production of typewriters with an installed capacity of 1.66 lakh numbers yearly. The total capacity approved for all types of typewriters (manual, electric and electronic) in the organised sector is 2.71 lakh nos. The production during 1987-88 was about 94,000 nos.

There are seven approved units in the organised sector for the manufacture of domestic and industrial sewing machines and the total installed capacity is 5.93 lakh numbers. Production in the organised sector is about 3.27 lakh numbers. Domestic sewing machines which are substantially produced in the small scale sector, are reserved for them.

Manufacture of electro-medical equipment has been a recent development in the country. Major items which are manufactured indigenously are x-ray equipment, ECG equipment, monitors, surgical equipment, etc. Production of whole-body scanners/brain scanners has been started recently in the organised sector.

LEATHER INDUSTRY

Leather industry in India, being a traditional industry, is highly employment-oriented. India is world's largest single raw material source of leather due to its livestock population. The leather industry can be divided into three distinct sectors, *viz.*, (i) organised units borne on the Register of the Directorate General of Technical Development (DGTD); (ii) small scale units registered with state directors of industries, and (iii) unregistered small scale and cottage industries. Of these, the small scale and the cottage sector accounts for about 90 per cent of the total production of leather and leather goods in the country. The organised sector contributes only the remaining 10 per cent.

During the Sixth Plan, the production target of leather footwear in the organised sector was 250 lakh pairs but the actual production was 160 lakh pairs of footwear. However, production of finished leather pieces from hides at the end of the Sixth Plan was 33.65 lakh numbers and production of finished leather pieces from skins was 74.30 lakh numbers. Against the production target of 320 lakh pairs of footwear in the decentralised sector, the actual production was around 300 lakh pairs and against the Sixth Plan target of 10 lakh numbers of leather garments, the actual production was three lakh numbers. There has been a substantial increase in the production of other varieties of leather goods. Production of footwear in the organised sector is estimated at 440 lakh pairs by the end of the Seventh Plan for which a capacity of 550 lakh pairs may be needed

CHEMICALS

Chemical industry plays a pivotal role in the Indian economy. It ranks fourth, next only to iron and steel engineering and textile industries. The industries in the organised sector recorded a growth rate of 9.3 per cent during 1986, while the growth of chemical products was 12.8 per cent during the same period.

The past few years have witnessed a rapid growth in the field of chemicals both organic and inorganic. Heavy organic and inorganic chemicals provide the basic building blocks for the manufacture of several downstream products like drugs, dyestuffs, pesticides, plastics, paints, etc. The industry is highly technology-oriented and a number of incentives have been given to the industry to promote research and development activities. Liberalising the licensing policy over the years has encouraged the setting up of medium scale units under the automatic registration procedure. The small scale units are being given adequate encouragement by reserving a number of chemicals for exclusive development in the small scale sector.

The development of organic chemical industry in India is of recent origin which started in April 1950 based on ethyl alcohol, manufactured from fermentation and distillation of sugarcane molasses and benzene available as a coke-oven by-product. At present, a substantial part of the industry is based on feedstocks derived from petroleum. Basic organic chemicals like phenol, methanol, formaldehyde, acetone and acetic acid are manufactured in the country in substanital quantities. The major inorganic chemicals like soda ash, carbon black, calcium carbide, red phosphorous and potassium chlorate are all manufactured in the country and a position of near self-sufficiency has been achieved in all these chemicals.

The only public sector unit in the chemicals sector, the Hindustan Organic Chemicals Limited, was incorporated on 12 December 1960 for manufacturing chemicals in intermediates required for drugs, dyestuffs and rubber chemical industries. It has completed its expansion programme for the manufacture of concentrated nitric acid and a second aniline nitrobenzene and hydrogen plant.

The alcohol producing industry was started in 1940 mainly to utilise molasses produced from sugar factories. With the growth of alcohol-based chemical industry in the '50s and '60s production of alcohol has assumed importance in its own right. The oil crisis has revived interest in the use of renewable feedstocks like alcohol. Well before this revival, a large alcohol-based chemical industry had come up in the country. It is mainly in India that a wide range of organic chemical products are manufactured on a commercial scale with alcohol as the feedstock. The major downstream products made from ethyl alcohol (industrial alcohol) are acetic acid, acetic anhydride, acetone, butanol, ethyl acetate, polyethylene, stryne, PVC and synthetic rubber.

PESTICIDES

Presticides which include insecticides, fungicides, rodenticides, etc., have assumed a vital role both for agriculture and public health purposes. The pesticides industry has made steady progress during the last three decades. The basic manufacture of pesticides commenced in India in 1952 with the setting up of a plant at Rishra near Calcutta for the manufacture of benzene nexa-chloride (BHC), which was followed by the DDT plant in 1954 in Delhi. There are more than 50 technical grade pesticides being manufactured in the country. More than 100 insecticides have also been approved for use. Forty-seven units are currently engaged in the manufacture of technical grade pesticides and over 500 units are making formulations.

As a result of increase in production of pesticides in the country, imports of technical grade pesticides have come down substantially. A large number of additional approvals have been granted for the manufacture of later generation pesticides such as synthetic pyrethroids and wheat weedicides. Imports of pesticidal formulations were generally not permitted.

The country is making sizeable export of basic inorganic and organic chemicals including dyes, dye intermediates, alcohol and coal tar chemicals. The exports may go up to Rs 300 crore by 1989-90 if planned efforts bear fruits.

There are two public sector units in the chemicals sector. These are Hindustan Organic Chemicals Ltd.(HOCL) manufacturing basic chemicals and Hindustan Insecticides Ltd.(HIL) manufacturing pesticides primarily for the National Malaria Eradication Programme. HOCL was incorporated on 12 December 1960 with an authorised capital of Rs 12 crore and with the main objective of manufacturing chemical intermediates required for drugs, dyestuffs, rubber chemicals and other vital chemicals. The authorised capital was increased from time to time and it now stands at Rs 70 crore. HOCL started its operation in 1970 at Rasayani, near Raigad, Maharashtra. The Company has also set up a phenol project at Cochin for manufacture of 40,000 TPA of phenol and 24,000 TPA of acetone at a cost of Rs 83.50 crore. This plant was commissioned in November 1987. HOCL has also floated a subsidiary company, namely, M/s Hindustan Fluors Carbons Ltd. for setting up a Poly Tetra Fluors Ethylene (PTFE) plant of 500 TPA capacity in Medak district of Andhra Pradesh at an estimated cost of Rs 31.84 crore, jointly with the State Industries Corporation and public participation in the equity capital. The PTFE production has also commenced in November 1987. HOCL has also plans for further diversification at a total investment of Rs 130 crore.

HIL, which was incorporated in March 1954, has at present three units at Delhi, Udyogmandal (Kerala) and Rasayani (Maharashtra). It also has a subsidiary company namely Southern Pesticides Corporation (SPEC) with headquarters at Hyderabad and factory at Kovvur. HIL is engaged in the manufacture of DDT, BHC, Malathion and Endosulfan, the four major pesticides used in the country. The authorised capital of HIL as on 31 March 1986 was Rs 30 crore and the paid-up capital has been raised to Rs 25.68 crore.

PHARMACEUTICALS

The growth in the pharmaceutical industry has put India ahead of any other country in the third world. It is widely acknowledged that the Indian pharmaceutical industry is the most diversified and vertically integrated of all developing countries. The country has acquired near self-sufficiency in formulations (the finished dosage forms in which medicines are administered, *e.g.*, tablets, capsules etc.) and in a large number of bulk drugs (i.e., the active ingredients of formulations). The Indian drugs industry has now reached a stage of operation comparable to international standards in production technology and quality of products. A wide range of curative and preventive medicines and vaccines made available by the industry has played a major role in the improvement of health standards in the country since 1947, especially in the control of communicable diseases such as cholera, plague, small pox, tuberculosis, besides malaria. A wide range of bulk drugs and formulations are being exported to several countries including West European countries. In 1985-86, the drugs of Rs 194 crore were exported. However, the country imports those drugs in bulk which are either yet to be produced or the capacity of which is inadequate. Major imports are Rifampicin, Cephalexine, Prednisolone, Ampicillin Sodium, Pyrazinamide, Ibuprofen, Vitamin B6, Naproxene and Alkaloids of Ergot.

The drugs produced cover a wide range of bulk drugs, steroids and hormones, synthetics, photo-chemical vitamins, biological products, etc. The techonology adopted for the production of bulk drugs covers intricate and sophisticated fermentation techology, synthetic operation and extraction and purification of active principles contained in the plant and animal kingdom. The production at the end of Sixth Plan was of the order of Rs 377 crore of bulk drugs and Rs 1,837 crore of formulations.

There are about 250 units in the organised sector; five of these are in the public sector (IDPL, HAL, BCPL and BIL), and seven in the joint sector. There are 11 MRTP companies without foreign equity and seven MRTP as well as FERA ones. About 5,000 units in small scale sector are engaged in the production of drugs. Of these, more than 100 are engaged in the production of bulk drugs.

Indian Drugs and Pharmaceuticals Ltd. (IDPL) was incorporated as a company under the Companies Act, 1956 on 5 April 1961. It has five plants located at Rishikesh for the manufacture of antibiotics, at Hyderabad for the manufacture of synthetic drugs, at Madras for surgical instruments and formulations, at Gurgaon for formulations and at Muzaffarpur for drugs and chemical intermediates.

The IDPL produces bulk drugs, formulations, surgical instruments and fine chemicals. The IDPL has four subsidiaries set up in association with state governments in Punjab, Rajasthan, Uttar Pradesh and Orissa. These are: The Punjab Maize Products Ltd., Sangrur, set up by PSIDC for manufacture of dextrose, starch, glucose, etc.; the Rajasthan Drugs and Pharmaceuticals Limited, Jaipur; the Uttar Pradesh Drugs and Pharmaceuticals Limited, Lucknow, and the Orissa Drugs and Chemicals Limited, Bhubaneshwar.

Hindustan Antibiotics Limited, incorporated on 1 March 1954, is manufacturing Penicillin, Streptomycin, Ampicillin, Gentamycin, Hamycin and Aureofungin. It has three subsidiary companies set up in collaboration with the state governments, namely, the Maharashtra Antibiotics and Pharmaceuticals Limited at Nagpur, the Karnataka Antibiotics and Pharmaceuticals Limited at Bangalore and the Goa Antibiotics and Pharmaceuticals Limited at Panaji.

The Government has also nationalised three sick drug manufacturing companies. The Smith Stainstreet Pharmaceuticals Limited which was taken over under I (D&R) Act, 1951 on 4 May 1972, was nationalised on 1 October 1977. The company is engaged in the manufacture of formulations only. The Bengal Chemicals and Pharmaceuticals Limited was taken over on 15 December 1977 and was nationalised on 15 December 1980. The company has at present four manufacturing units—two in West Bengal, one in Kanpur and one in Bombay. This undertaking is engaged in the manufacture of chemicals like sulphuric acid, alum, chrome salt, home products like soaps, hair oil, perfumes, etc., and drugs and pharmaceuticals like Dapsone, Caffeine, Ampicillin, Doxycycline, etc., and their formulations. The Bengal Immunity Limited, taken over by the Government on 18 May 1978, was nationalised 1 October 1984. The Company is engaged in the manufacture of sera, anvitenom and chloroquin phosphate.

PETRO-CHEMICALS

With their superior properties, the petro-chemical products are substituting the traditional raw materials like wood, glass and metal, etc. It has opened up immense possibilities of application both for domestic as well as industrial products. The use of plastics in various sectors is bringing about revolutionary changes.

The petro-chemical industry has come up in a big way in India in recent years The range of products covers basic building blocks and intermediates, plastic raw materials, synthetic fibres, synthetic rubber, synthetic detergent raw materials and a host of other products. The production of synthetic fibres which was around 1.5 lakh tonnes in the terminal year of the Sixth Plan period increased to around 2.5 lakh tonnes in 1987-88. Similarly, the production of plastic raw materials increased from around 2.7 lakh tonnes to 2.85 lakh tonnes in 1987-88 despite the closure of two plants. Also, with the commissioning of new capacities, there has been phenomenal increase in the domestic availability of LAB, which is used in the manufacture of synthetic detergents. As of now, the country has not only achieved self-sufficiency in synthetic fibres and LAB, but has also exportable surplus of these products. Considering the impact that the petro-chemicals can make in the vital sectors of economy, it has been identified as a thrust area for development. A number of new petro-chemical complexes/ projects are planned to be set up in the country during the Eighth Five Year Plan to cater to the growing demand for petro-chemical products.

There are three organisations in the field of petro-chemicals under the administrative control of the Department of Chemicals and Petrochemicals. The Indian Petrochemical Corporation Ltd (IPCL), Baroda has set up an integrated petro-chemical complex near Vadodara producing xylenes, DMT, LDPE, PP, PBR, ethylene oxide/glycol, acrylonitrile, LAB, acrylates and petroleum resins. The gross turnover of IPCL in 1987-88 was Rs 88 crore. At present, IPCL is engaged in the implementation of Maharashtra Gas Cracker Complex at Nagothane. In this complex LDPE, LLDPE, PP, HDPE and MEG will be produced.

Petrofils Cooperative Limited is a joint venture of the Government of India and cooperative of yarn users to manufacture polyester filament yarn, near Vadodara in Gujarat. Petrofils is presently engaged in setting up a 6,000 tonnes per annum capacity nylon filament yarn plant.

Central Institute of Plastic Engineering and Technology was set up in 1968 under the United Nations Development Programme for imparting specialised training and providing assistance in the development and growth of plastic industries. The main objectives of the Institute are trained manpower development, application development, testing and quality control, consultancy and advisory services and documentation. One extension centre of the Institute was set up at Ahmadabad in 1981-82. Five more such centres are being set up during the Seventh Plan at Lucknow, Hyderabad, Bhubaneshwar, Bhopal and

Imphal. The emphasis at these centres would be on electronics, automobiles, engineering, plastics, housing and packaging.

MINERALS

India is richly endowed with minerals. Under the Constitution, mineral rights and the administration of mining laws are vested in the state governments. The Central government, however, regulates the development of minerals under the Mines and Minerals (Regulation and Development) Act, 1957 and the rules and regulations framed under it. This statute empowers the Centre to formulate rules for: (i) the grant to prospecting licenses and mining leases, (ii) the conservation and development of minerals, and (iii) the modification of old leases. The Mines and Minerals (Regulation and Development) Act, 1957 came into force on 1 June 1958. A number of amendments to this Act were made in 1972.

MINERAL RESOURCES

The important occurrences of the principal minerals found in the country along with their estimated reserves are given here:

BAUXITE

Important deposits occur in Andhra Pradesh, Bihar, Goa, Gujarat, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh. The reserves of bauxite of all grades have been estimated at 265.37 crore tonnes.

BARYTES

India possesses the largest reserves of barytes in the world which are placed at 7.39 crore tonnes. Most of the reserves are located at Mangampet *taluka* in Cuddapah district, Andhra Pradesh. Other minor occurrences are reported from Rajasthan, Tamil Nadu, Himachal Pradesh, Bihar, West Bengal, Maharashtra, Karnataka, Madhya Pradesh and Uttar Pradesh.

COAL AND LIGNITE

Vast deposits of coal of Gondwana formations occur in Andhra Pradesh, Bihar, Madhya Pradesh, Maharashtra, Orissa and West Bengal and of the tertiary formations in Arunachal Pradesh, Assam, Meghalaya, Jammu and Kashmir and Nagaland. The overall reserves of coal, both coking and non-coking, have been estimated at about 15,930 crore tonnes of which the Gondwana coals account for 15,846 crore tonnes and the tertiary coals 84 crore tonnes. Significant reserves of lignite occur in Gujarat, Jammu and Kashmir, Pondicherry, Rajasthan and Tamil Nadu. The total known reserves of lignite are placed at 429 crore tonnes of which the Neyveli field in Tamil Nadu alone contains 383 crore tonnes.

CHROMITE

Deposits of economic significance occur in Andhra Pradesh, Bihar, Karnataka, Maharashtra, Manipur, Orissa and Tamil Nadu. The total reserves of *in situ* chromite including lumps and fines are about 13.53 crore tonnes.

COPPER ORE

Major and important copper ore producing areas are in Singhbhum district, Bihar, Balaghat district, Madhya Pradesh and Jhunjhunun and Alwar districts, Rajasthan. In addition, small production of copper ore comes from Khammam district, Andhra Pradesh, Chitradurga and Hassan districts of Karnataka and Sikkim. The total all-India reserves are estimated at about 57.80 crore tonnes with a metal content of about 63.76 lakh tonnes.

DIAMOND

The main diamond bearing areas in India are thc Panna belt in Madhya Pradesh, Ramallakota and Bangarapalle conglomerate rocks in Kurnool district and the gravels of Krishna river basin in Andhra Pradesh. At present Panna district is the only pipe under exploitation. The diamond reserves in Panna field are placed at 5,51,000 carats.

DOLOMITE

Occurrences of dolomite are widespread and are reported from Andhra Pradesh, Arunachal Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Uttar Pradesh and West Bengal. The total reserves of dolomite of all grades are placed at 395 crore tonnes.

GOLD

There are three important gold fields in the country, namely, Kolar field in Kolar district and Hutti gold field in Raichur district, both in Karnataka, and Ramgiri gold field in Anantpur district of Andhra Pradesh. Gold production, however, mainly comes from the first two fields at present. A small quantity of gold is recovered from ore produced incidental to prospecting and exploratory operations in Andhra Pradesh. In addition, gold is also recovered as a by-product from copper slimes in the workings in Bihar. The total estimated gold ore recoverable reserves in the country are placed at 148.5 lakh tonnes with a total gold content of 81.06 thousand kg. Production from Yeppamanna mines in Anantpur district of Andhra Pradesh has commenced from May 1984. The production from Chingargunta mines in Chittoor district of Andhra Pradesh is also likely to commence shortly.

FIRECLAY

India has vast resources of good quality fireclay used for working refractory bricks. The fireclays are distributed in Andhra Pradesh, Bihar, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Rajasthan, Tamil Nadu and West Bengal. The total all-India reserves of fireclay are placed at 49.28 crore tonnes.

FLUORSPAR

Fluorspar occurs in Gujarat, Madhya Pradesh and Rajasthan from where a total recoverable reserve of 118.9 lakh tonnes is reported.

GYPSUM

Deposits of gypsum are estimated at 124.86 crore tonnes in the country of which 107.08 crore tonnes are in Rajasthan, 14.93 crore tonnes in Jammu and Kashmir and 1.82 crore tonnes in Tamil Nadu.

GRAPHITE

Graphite occurs in Orissa, Bihar, Andhra Pradesh, Rajasthan, Tamil Nadu and Gujarat with minor occurrences in Haryana and Uttar Pradesh. The major producing state is, however, Orissa. The known recoverable reserves of graphite are 46.4 lakh tonnes containing 10 to 40 per cent fixed carbon.

ILMENITE

It occurs mainly in the eastern and western coasts of India associated with beach sands. Of the workable deposits of this type, those in Kerala, Orissa and Tamil Nadu are important. The total reserves of ilmenite are placed at 10 crore tonnes.

IRON ORE

Major iron ore mining activities are presently carried out in the areas located in Bihar. Goa, Karnataka, Madhya Pradesh, Maharashtra and Orissa. Minor production also comes from Andhra Pradesh and small production from Rajasthan. The total estimated reserves of iron ore in the country are placed at 1,916.6 crore tonnes of which 1,306.6 crore tonnes are hematite and 610 crore tonnes magnetite ore.

KAOLIN

India possesses vast resources of kaolin and other clays. The major areas are Rajasthan, Andhra Pradesh, West Bengal, Delhi, Bihar, Kerala, Orissa, Tamil Nadu and Gujarat. Inventory of kaolin resources including white clay are placed at 104 crore tonnes.

LEAD-ZINC

The known reserves of lead-zinc ore are located in Andhra Pradesh, Gujarat, Maharashtra, Meghalaya, Tamil Nadu, Orissa, Sikkim and Rajasthan. The total reserves have been estimated at about 35.85 crore tonnes which in terms of metal content amount to 0.5 crore tonnes of lead and 1.6 crore tonnes of zinc.

LIMESTONE

Limestone occurs extensively in the country and is produced in almost all the states. The major producing states are Madhya Pradesh, Tamil Nadu, Andhra

Pradesh, Gujarat, Bihar, Orissa, Rajasthan and Karnataka. The total reserves of limestone of all grades are placed at 7,328.2 crore tonnes.

MANGANESE ORE

Rich deposits of manganese ore are located in Andhra Pradesh, Goa, Gujarat, Karnataka, Madhya Pradesh, Tamil Nadu, Bihar, Orissa, Rajasthan and Karnataka. The total reserves are placed at 15.8 crore tonnes.

MICA

Economic deposits of mica are found in three important belts in Andhra Pradesh, Bihar and Rajasthan.

NICKEL ORE

Nickel ore is found in Cuttack, Keonjhar and Mayurbhanj districts of Orissa. Minor occurrences are in Bihar and Nagaland. The total reserves are placed at 16 crore tonnes.

PHOSPHATE MINERALS

Deposits of phosphorites are located in Chhatarpur, Sagar and Jhabua districts of Madhya Pradesh, Udaipur, Jaisalmer and Banswara districts of Rajasthan and Dehra Dun, Tehri and Lalitpur districts of Uttar Pradesh. Besides, apatite deposits of commercial importance are reported to occur in Bihar, Andhra Pradesh, Rajasthan, West Bengal and Tamil Nadu. The total reserves of rock phosphate (including apatite) are placed at 18.74 crore tonnes.

TUNGSTEN

Tungsten is reported from Rajasthan, West Bengal, Maharashtra and Karnataka. Minor tungsten occurrences are also reported from Andhra Pradesh, Nagaland, Bihar, Haryana and Uttar Pradesh. The all-India recoverable reserves of tungsten ore have been estimated at about 510 lakh tonnes.

REFRACTORY MINERALS

Important deposits of magnesite are found in Salem district of Tamil Nadu, Almora, Chamoli and Pithoragarh districts of Uttar Pradesh and Mysore and Hassan districts of Karnataka with smaller ones in J & K and Kerala. The total estimated reserves are about 26.8 crore tonnes. Kyanite and sillimanite are other important refractory minerals. Kyanite is located in Singhbhum district of Bihar, Bhandara district of Maharashtra and in Karnataka. The total reserves of Kyanite are placed at 0.3 crore tonnes. Lumpy sillimanite occurs in Meghalaya, Maharashtra and Madhya Pradesh. Besides, sillimanite occurs in the beach sand deposits of Kerala, Orissa and Tamil Nadu. The total reserves of sillimanite are placed at 120 lakh tonnes.

OTHER MINERALS

There are quite a few other minerals occurring in India, such as chrysotile asbestos (Andhra Pradesh and Bihar), bentonite (Bihar, Gujarat, Jammu and Kashmir, Tamil Nadu and Rajasthan), calcite (Gujarat, Rajasthan, Karnataka, Uttar Pradesh and Madhya Pradesh), corundum (Madhya Pradesh, Andhra Pradesh, Karnataka and Maharashtra), garnet (Rajasthan and Andhra Pradesh), emerald (Rajasthan), felspar (Rajasthan, Andhra Pradesh, Karnataka and Tamil Nadu), pyrite (Bihar and Rajasthan), steatite (Rajasthan, Andhra Pradesh, Bihar and Karnataka), vermiculite (Tamil Nadu, Andhra Pradesh Rajasthan and Gujarat), and wollastonite (Rajasthan). Quartz and other sillica minerals are widespread in occurrence and are reported from almost all the states in India. Besides, there are vast resources of building stones of which granite and marble are important. While granite is extensively mined in Andhra Pradesh, Karnataka, Rajasthan and Tamil Nadu and in a small way in West Bengal, marble is mined extensively in Rajasthan, Haryana and Gujarat.

MINERAL DEVELOPMENT

A number of organisations are engaged in the development and exploration of mineral resources in India. These include Geological Survey of India, Indian Bureau of Mines and a number of public sector undertakings.

GEOLOGICAL SURVEY OF INDIA

Geological Survey of India (GSI) with headquarters at Calcutta, is now the principal agency entrusted with geological activities in the country. The GSI is responsible for the preparation of the geological, geochemical and geophysical maps (ground and airborne) of the country, including offshore areas. These are for the exploration and evaluation of all mineral deposits except oil, natural gas and atomic minerals, for carrying out studies relating to geotechnical problems, for rendering expert technical advice to different engineering projects and for conducting geoenvironmental studies connected with mining, desert control, etc. The Department is carrying out research, both fundamental and applied, in varied branches of earth sciences, e.g., in the field of geochronology, stratigraphy, palaeontology, petrology. remote sensing, mineralogy, geochemistry, analytical chemistry and geophysics. It is also carrying out special investigations on geothermics, glaciology, seismology, etc. The results of various activities carried out by regions/wings are collected, collated, processed and disseminated through information processing units, publications and map productions and data centres. Training programmes for developing scientific manpower resources have been given a high priority in the Department and the training assistance is extended to other Indian organisations and member countries of the ESCAP.

INDIAN BUREAU OF MINES

Indian Bureau of Mines (IBM) is a scientific and technical organisation under the Department of Mines, Ministry of Steel and Mines. It is primarily responsible for the promotion of conservation and scientific development of mineral resources of the country other than coal, petroleum and natural gas, atomic minerals and minor minerals. Towards this end it undertakes inspection and study of mines and research on the beneficiation of low grade ores and minerals and on special mining problems. It provides technical consultancy service to the mining industry for survey and geological appraisal of mineral resources and the preparation of feasibility reports of mining projects including beneficiation plants. It conducts market surveys to assist the mineral trade in the marketing of minerals, prepares mineral maps of compact mineral blocks and inventory of mineral resources. The IBM also functions as a data bank of mines and minerals and publishes periodically statistical information relating to mines and minerals. It also brings out technical publications in the form of monographs on individual minerals and bulletins on different connected subjects. The important publications are: *Indian Minerals Year Book* (annual), *Bulletin of Mineral Information* (quarterly), *Consumption of Non-Ferrous Metals in India (Cu. Pb. Zn)* (quarterly), *Mineral Statistics of India* (half yearly), *Monthly Statistics of Mineral Production, Foreign Trade in Minerals and Metals* (annual) and *Indian Mineral Industry at a Glance* (annual).

PUBLIC SECTOR UNDERTAKINGS

Department of Mines has six public sector undertakings under its charge. These are: (1) Hindustan Zinc Ltd. (HZL); (2) Hindustan Cooper Ltd. (HCL); (3) Bharat Gold Mines Ltd. (BGML); (4) Bharat Aluminium Co. Ltd. (BALCO); (5) National Aluminium Co. Ltd. (NALCO); (6) Mineral Exploration Corporation Ltd. (MECL). The NALCO project is still at construction stage and trial production has started. The MECL is concerned with mining and drilling operations. Others are producing non-ferrous metals. In addition, the Government holds 49 per cent of the equity in Sikkim Mining Corporation. The Company produces copper, lead and zinc concentrates in small quantities.

Hindustan Zinc Ltd. was incorporated in January 1966 to develop mining and smelting capacities for zinc and lead in the country. Starting with a 500 tonnes per day mine at Mochia in Rajasthan and a 3,600 tonnes per year lead smelter at Tundoo in Bihar, the HZL today has seven operating mines with a capacity of 8,740 tonnes of ore per day and three smelters with a metal capacity of 1,09,000 tonnes per year. In addition to the primary metal and lead, the product profile of the Company includes by-products such as cadmium (305 tonnes per year), silver (48.8 tonnes per year), sulphuric acid (1,62,000 tonnes per year), phosphoric acid (26,000 tonnes per year) and other items like single super phosphate, zinc sulphate, copper sulphate, etc.

Based on the zinc-lead rich deposits of Rampura-Agucha in Bhilwara district, a proposal for setting up a new zinc-lead smelter is under consideration by the Hindustan Zinc Ltd. at Chanderiya in Chittorgarh district of Rajasthan at an estimated cost of Rs 366.40 crore. The proposed capacity of this smelter is 1,05,000 tonnes (70,000 tonnes zinc and 35,000 tonnes lead) per annum. The first phase of the project, covering obtaining of license, knowhow, basic engineering and technical assistance services leading to preparation of firm cost estimates is under implementation.

Hindustan Copper Ltd. was incorporated in November 1967 to take over from the National Mineral Development Corporation, the schemes and studies pertaining to exploration, exploitation, mining and smelting of copper from Khetri, Kolihan, Dariba and Rakha Copper projects. The HCL has seven operating units, namely: the Khetri Copper Complex in district Jhunjhunun, Rajasthan; the Indian Copper Complex at Ghatsila, district Singhbhum, Bihar; the Malanjkhand Copper Project in district Balaghat, Madhya Pradesh; the Rakha Copper Project in district Singhbhum; the Dariba Copper Project in district Alwar, Rajasthan; the Chandmari Copper Project in district Jhunjhunun, and the Lapso Kyanite Mines in district Singhbhum. The HCL is at present the sole producer of primary copper in the country. But it is also associated in the recovery of precious metal and mining found as traces in copper. These include gold, silver, selenium, tellurium and nickel and nickel sulphate.

Bharat Gold Mines Limited is the foremost producer of gold in the country, the other one being Hutti Gold Mines Limited (HGML), an enterprise of the Karnataka government. The BGML operates the world famous Kolar Gold Mines. Gold mining in Kolar started in 1880 under a private company which continued till 1956 when the mines were nationalised. The BGML was incorporated in 1972 to take over and operate these mines. There are three working mines in the Kolar gold field *viz.*, Mysore Mines, Nundy Drug and Champion Reef. Besides this, the BGML is also exploiting the Yeppamauna mine project of Andhra Pradesh. Mining of this universally coveted metal is carried out under extremely difficult conditions. Mining has reached the extreme depths at Kolar gold fields. The Gifford shaft now measures 2,190 metres from the ground and is perhaps the deepest mine in the world. The gold extracted in 1985-86 was at a grade of 3.14 gm per tonne of ore milled.

The first totally intergrated aluminium complex in the public sector came into existence under BALCO. The Company was incorporated on 27 November 1965 with the main objective of constructing, operating and managing aluminium projects. It has established an integrated project at Korba in Madhya Pradesh based on bauxite deposits in Amarkantak/Phutkapahar areas. The Alumina plant of the Korba complex with an installed capacity of producing two lakh tonnes annually was commissioned in April 1973. The fourth and the last phase of the smelter is in operation from September 1984. The smelter with an installed capacity of producing annually one lakh tonnes of aluminium metal has been working to near-installed capacity since October 1984.

BALCO is establishing an alternative source of bauxite at the Gandhamardan mines in Orissa to replace the existing captive mines at Amarkantak and Phutkapahar where reserves are getting gradually depleted. The Government has nationalised the aluminium undertaking (a sick unit) located at Jakeynagar near Asansol (West Bengal) and belonging to the Aluminium Corporation of India Limited, Calcutta from 2 June 1984 and vested it in BALCO.

National Aluminium Company Ltd. (NALCO) was set up with headquarters at Bhubaneshwar on 7 January 1981 as an integrated alumina/aluminium complex in Orissa with the major components: (a) an open—cast bauxite mine at Panchapatmali in Koraput district to produce 24 lakh tonnes of bauxite per year; (b) an alumina plant of eight lakh tonnes consisting of two streams each of four lakh tonnes per year at the foot of the Panchapatmali Hill at Damonjodi in Koraput district; (c) an aluminium smelter of 2,18,000 tonnes per year capacity consisting of two pot lines each of 1,09,000 tonnes at Angul in Dhenkanal district, and (d) a 6,000 mw capacity captive power plant at Angul to supply power to the aluminium smelter located at a distance of five km. The estimated cost of the project is Rs 2,408.14 crore. The bauxite mine and crusher have been completed in November 1985 and the first phase of the alumina and aluminium smelter is scheduled to start shortly.

Sikkim Mining Corporation, a joint venture of the Central government and the Sikkim government, has been working on the Bhotang Poly metal ore deposit at Rangpo in Sikkim. The ore is treated for production of copper, lead and zinc concentrates at the beneficiation plant at Rangpo.

Mineral Exploration Corporation Ltd. was registered in 1972 to undertake detailed mineral exploration for assessing the mineral reserves of the country and providing consultancy/expert services in turn-key mineral projects. Besides, the Corporation is engaged in mine construction, geotechnical work at dam sites and drilling and construction of tubewells. The Corporation, with its headquarters at Nagpur, carries out detailed mineral exploration on behalf of the Government as promotional activity and for public and private sector enterprises and organisations, state governments, etc., on contractual basis. The Corporation has achieved up to the end of March 1987 more than 23.61 lakh metres of drilling and over 1.07 lakh metres of exploratory mining since inception. It continues to play the role of a premier exploration agency in the country. Since it inception in 1972, MECL, at a total cost of Rs 194 crore, has proved about 2,430 crore tonnes of different minerals/ores comprising coal, bauxite, base-metals, gold, iron ore, limestone, etc., the *in situ* value of which exceeds Rs 8,53,667 crore. The Corporation has been shortlisted as a consultancy organisation by the World Bank, the Asian Bank and the Exim Bank. It may be mentioned that the entire exploration activities of the Corporation are being carried out by Indian experts without the assistance from foreign consultancy organisations or specialists.

MINERAL PRODUCTION

The production of important minerals during the last five years is given in table 20.9.

TABLE 20.9 PRODUCTION OF IMPORTANT MINERALS

(Value: Rs crore)

Mineral	Unit of Qty.	1984		1985		1986		1987		1988[3]		January to March 1989[4]	
		Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
ALL MINERALS			8,412.82		9,122.29		10,149.82		11,156.63		11,742.16		3,147.13
Coal	LT	1,439.0	2,944.09	1,497.0	3,070.84	1,626.0	3,742.81	1,773.0	4,086.44	1,880.0	4,300.5	576.0	1,315.52
Lignite	LT	77.0	121.77	78.0	131.24	80.0	142.22	83.0	167.56	84.0	177.29	26.0	55.73
Natural Gas[1]	CCM	392.2	13.82	468.8	16.56	662.8	23.33	633.4	22.33	745.7	26.28	208.1	7.33
Petroleum (Crude)	LT	279.0	4,136.28	299.0	4,517.82	312.0	4,714.05	301.0	5,315.78	308.0	5,584.58	74.0	1,333.46
METALLIC MINERALS													
Bauxite	TH.T	2,093.0	15.01	2,341.0	19.85	2,662.0	27.03	2,736.0	30.89	3,011.0	42.15	829.0	11.60
Chromite	TH.T	459.0	29.85	569.0	46.19	630.0	59.59	625.0	64.09	759.0	81.99	200.0	21.64
Copper Ore	TH.T	3,923.0	78.22	4,211.0	89.92	4,462.0	93.52	5,139.0	106.41	5,326.0	111.84	1,331.0	27.94
Gold	KG.	1,989.0	46.31	1,853.0	51.09	1,931.0	56.36	1,864.0	54.75	1,900.0	59.01	392.0	12.17
Iron Ore	TH.T.	42,310.0	238.25	44,090.0	254.07	51,610.0	313.95	51,018.0	312.48	52,322.0	356.21	15,548.0	105.85
Lead Conc.	TONNE	34,707.0	21.82	35,433.0	23.40	44,230.0	28.57	47,364.0	30.69	39,898.0	26.49	8,925.0	5.93
Manganese Ore	TH.T.	1,147.0	33.02	1,269.0	33.32	1,284.0	37.87	1,302.0	37.97	1,324.0	41.04	347.0	10.77
Silver	KG.	24,886.0	8.84	25,587.0	9.64	35,266.0	14.53	37,943.0	16.18	44,439.0	19.06	14,019.0	6.01
Zinc Conc.	TONNE	85,875.0	42.59	87,178.0	44.74	89,510.0	45.28	1,04,809.0	53.19	1,11,430.0	56.38	28,809.0	14.58
NON-METALLIC MINERALS													
Apatite	TH.T.	16.0	0.42	15.0	0.43	11.0	0.36	12.0	0.36	10.0	0.26	3.0	0.09
Phosphorite	TH.T.	874.0	36.02	934.0	30.06	656.0	28.03	670.0	28.28	668.0	31.40	246.0	11.56
Asbestos	TONNE	26,908.0	1.75	30,078.0	1.94	26,713.0	1.93	29,110.0	1.47	31,303.0	1.50	9,537.0	0.46
Barytes	TH.T.	468.0	6.93	589.0	8.76	337.0	6.64	247.0	4.73	393.0	5.89	116.0	1.74
Diamond	CARAT	14,391.0	2.10	16,271.0	2.41	16,116.0	2.52	16,484.0	3.52	14,613.0	3.42	4,167.0	0.98

TABLE 20.9 (Continued)

Mineral	Unit of Qty.	1984		1985		1986		1987		1988[3]		January to March 1989[4]	
		Qty.	Value	Qty	Value	Qty.	Value	Qty	Value	Qty.	Value	Qty.	Value
Dolomite	TH.T.	2,383.0	15.63	2,256.0	15.06	2,208.0	14.54	2,233.0	15.34	2,213.0	15.49	560.0	3.92
Fireclay[2]	TH.T.	735.0	2.47	663.0	2.98	705.0	3.35	634.0	3.20	692.0	3.46	163.0	0.81
Flourite (Graded)	TONNE	4,672.0	0.76	4,156.0	1.23	6,841.0	1.47	5,790.0	1.10	4,387.0	0.99	1,758.0	0.40
Fluorite (Conc.)	TONNE	17,475.0	6.20	16,221.0	5.75	11,733.0	4.14	12,709.0	5.42	N.A.	N.A.	N.A.	N.A.
Gypsum	TH.T.	1,268.0	5.27	1,291.0	5.97	1,640.0	8.34	1,724.0	9.79	1,576.0	9.45	328.0	1.97
Kaolin	TH.T.	625.0	8.50	745.0	9.48	747.0	9.15	684.0	9.19	526.0	8.42	153.0	2.44
Kyanite	TONNE	37,951.0	2.82	30,635.0	1.74	32,394.0	1.70	39,959.0	2.35	36,951.0	2.73	9,779.0	0.72
Silimanite	TONNE	17,538.0	1.82	17,129.0	1.88	14,674.0	1.37	12,756.0	1.25	13,925.0	1.28	4,261.0	0.39
Limestone	TH.T.	45,857.0	175.82	49,343.0	197.14	53,557.0	223.25	57,170.0	224.76	61.045.0	233.68	15,323.0	58.66
Lime Kankar	TH.T.	109.0	0.49	98.0	0.63	108.0	0.68	88.0	0.55	76.0	0.46	19.0	0.12
Lime Shell	TH.T.	182.0	2.03	158.0	1.94	154.0	1.86	142.0	1.69	107.0	1.28	21.0	0.25
Calcareous Sand	TH.T.	693.0	1.25	740.0	1.46	537.0	2.30	147.0	0.75	15.0	0.08	++	++
Magnesite	TH.T.	420.0	14.67	421.0	15.00	460.0	17.72	430.0	18.30	460.0	16.09	97.0	3.40
Mica (Crude)	TONNE	6,170.0	3.33	4,820.0	2.67	4,746.0	2.87	4,299.0	2.67	3,609.0	1.93	842.0	0.45
Pyrites	TH.T.	37.0	1.50	17.0	0.71	22.0	0.66	36.0	0.91	30.0	0.91	6.0	0.17
Steatile	TH.T.	345.0	3.87	359.0	4.95	379.0	5.33	371.0	6.45	382.0	4.97	110.0	1.43
Other Major Min. Val.			15.92		17.81		17.31		20.60		20.46		4.84
Minor Minerals Value			373.38		474.61		495.19		495.19[5]		495.19[5]		123.80[5]

LT lakh tonnes. TH.T. Thousand tonne. CCM Crore cubic metre. KG Kilogram.

1 Relates to gas utilised

2 Excludes the production of fireclay, if any, recovered incidental to coal mining.

3 Comprised the recorded figures up to August, 88 and estimated for September to December 1988.

4 Estimated

5 Previous year figure repeated as current data have not been received yet.

N.A. Not available.

++ Negligible.

VILLAGE AND SMALL INDUSTRIES

The modern small scale industries and unorganised traditional industries are known as the village and small industries (VSI). The VIS sector is divided into eight sub-sectors. The small scale industries and powerlooms represent the modern small industries and khadi, village industries, handlooms, sericulture, handicrafts and coir represent the traditional industries.

The development of small scale industries has been given high priority in successive five year Plans in view of its advantages in terms of low investment and high potential for employment generation in rural and semi-urban areas. The importance of this sector has been further highlighted by its inclusion in the 20-Point Programme which lays emphasis on handicrafts, handlooms, small and village industries and gives them all facilities to grow and to update their technology.

The small scale industries have grown phenomenally during the last decade and the sector today occupies a position of unique importance in the economy of the country. Village and small scale industries taken together account for about 49 per cent of the total industrial production and the contribution of industries falling under the purview of small industries development organisation is about 33 per cent.

The investment limit in the definition of small scale industries has since been revised upward in 1985 from Rs 20 lakh investment in plant and machinery to Rs 35 lakh and in case of ancillary units from Rs 25 lakh to Rs 45 lakh. Furthermore, all service-oriented enterprises continue to be eligible to be registered as small scale establishments provided these are set up in rural areas and towns with a population of five lakh or less subject to a ceiling on investment in plant and machinery of Rs two lakh. On being so registered they would be entitled to the same concessions and incentives as are available to small scale and ancillary industries.

HANDICRAFTS

This sector plays an important role in the Indian economy by providing employment opportunities and helping the country to earn foreign exchange. In 1985-86, the export of handicrafts (other than gems and jewellery) was provisionally placed at Rs 392.34 crore. During 1986-87 (April 1986—February 1987) exports of Rs 375.37 crore (provisionally) have been achieved. The All India Handlooms and Handicrafts Board was reconstituted in October 1984 to advise the Government on matters relating to development of handlooms and handicrafts. The Development Commissioner for Handicrafts is responsible for implementation of various schemes for development of handicrafts in the Central sector. It has five regional offices at Bombay, Calcutta, Madras, Lucknow and New Delhi. The National Handicrafts and Handlooms Museum has been set up at New Delhi. Design centres at Bangalore, Calcutta, Bombay and New Delhi are the focal points of development of design for servicing requirements of various exporters and state level handicrafts development corporations and apex societies. The design centres at Bangalore and New Delhi have been converted into a society under the name and title *Rangatantra Society* so as to enable them to function more effectively.

TECHNICAL DEVELOPMENT

Directorate General of Technical Development (DGTD), a part of the Ministry of Industry, is the principal technical advisory organisation of the Government of India on matters relating to industrial development of the country. Headed by Secretary (TD) and DG (TD), the DGTD has three functional wings, *viz.,* Engineering Industries Division, Chemical Industries Division and Management Wing. In charge of these wings and divisions are four deputy directors general, two each in engineering and chemical disciplines, and a number of industrial advisers who head the various directorates for different industrial disciplines. There are 27 directorates, each headed by an industrial adviser/additional industrial adviser. Taking into account the need for decentralisation and for reaching the industries, regional offices have been opened since 1979. There are at present five regional offices—one each at Madras, Calcutta, Hyderabad, Lucknow and Bombay—headed by an industrial adviser. The Lucknow, Madras and Bombay regional offices have a camp office in Bhopal, Bangalore and Ahmadabad respectively.

The functions of the DGTD are three-fold—advisory, developmental and regulatory. The advisory functions include advice to various Central ministries, departments and organisations on the one hand and the industry, both in the public and private sector, on the other hand on all aspects of industrial development. The main areas covered are scrutiny of applications for industrial license/registration, proposals for foreign collaboration and import of capital goods. The DGTD is fully associated with the concerned ministries/departments in the formulation of industrial development plans/import/export/fiscal policies. The DGTD extends entrepreneurial guidance for setting up industries. On the developmental front, the DGTD maintains close coordination with the Planning Commission for determining sectoral priorities and allocation of Plan funds. It guides the working of development councils set up under the I(D&R) Act and is associated with various scientific and technical organisations. It is the focal point for choice of technologies, setting up of R and D facilities, absorption and assimilation of imported technology and equipment. The regulatory functions of the DGTD largely emanate from the ultimate object of achieving self-reliance through planned and balanced growth of industry.

The DGTD is the technical authority for registration of industrial undertakings exempt from licensing, i.e., units investment in fixed assets up to Rs 50 crore for projects to be located in backward areas and Rs 15 crore for other areas, and with the requirements of foreign exchange for raw materials/components within specified limits provided the location is permissible in terms of criteria announced in this regard. The facility of exemption is available to industries except those which have been specifically listed. Units engaged in the manufacture of non-scheduled inventories and those employing less than 50 workers are also required to be registered with DGTD. MRTP/FERA companies are also eligible for registration with DGTD in respect of items delicensed for MRTP/FERA companies, subject to fulfillment of stipulated conditions.

During 1986 and 1987, 1,162 and 1,204 schemes respectively were registered. Out of these, share of backward areas was 610 schemes in 1986 and 651 schemes in 1987. Although a wide range of industries fall under the purview of DGTD, the growth of 129 selected industries is being monitored closely. The total weight of these industries is about 38.6 per cent in the General Index of Industrial Production (base 1980-81). The overall growth of DGTD units during the period April-December 1987 has been estimated at 10.5 per cent over the corresponding period of the previous year. Major thrust of industries in 1987 was towards plastic and polymer industries, for which 283 units were registered followed by oil (126 units) and drugs and pharmaceuticals (116 units). In terms of regional distribution in 1987, the largest share goes to Maharashtra (198 units) followed by UP (166 units).

SMALL INDUSTRIES DEVELOPMENT ORGANISATION

Small Industries Development Organisation provides a comprehensive range of consultancy services and technical, managerial, economic, statistical, and marketing assistance to small scale units through its network of 27 Small Industries Services Institutes (SISIs), 31 branch SISIs, 37 extension centres, four regional testing centres and three process-cum-product development centres. The Small Industries Development Organisation has recently launched various technology support programmes for the benefit of small scale industries in the country through a number of steps undertaken such as establishment of (a) process-cum-product development centres; (b) tool rooms and training centres; (c) specialised institutions, *i.e.*, electrical measuring instruments, tools, designs, and (d) regional testing centres with its field-testing stations.

There are three process-cum-product development centres (PPDCs) for glass and ceramics at Ranchi, sports goods and leisure-time equipment at Meerut and foundry and forge technology at Agra (with UNDP assistance). These PPDCs will be revamping testing facilities for process and products to be developed. There are 10 more PPDCs planned for the Seventh Plan period for plastics, centrifugal pumps, auto and miniature lamps, agricultural tools and implements, transformers, welding technology, domestic electrical appliances, mechanical designs and tooling and toys, chemical, diesel engines, etc.

Tool rooms and training centres set up at Calcutta, Ludhiana and

Hyderabad with the assistance of Denmark, UNDP and the Federal Republic of Germany are providing consultancy services to engineering industry on production process, standardisation of components, employment of improved tools and facilities for design and manufacture of high quality and precision tools, jigs and fixtures, press tools, guages and facilities for heat treatment to the industry. Long-term training courses are also conducted to improve skills in the field of tool-designing and tool-making as well as short-term refresher courses. The specialised institutes such as the Institute for Design and Electrical Measuring Instruments, Bombay render services to the measuring instruments industry like calibration, testing of instruments, manufacturing jigs, tools and fixtures and developing new instruments in the field of flow measurements. The institute at Jalandhar is set up with the UNDP assistance for upgrading skills of hand-tool manufacturers. The Ministry of Industry, through Uttar Padesh government and Delhi administration, has set up two tools at Lucknow and New Delhi to cater to the tooling and training requirements of the industries in these two areas.

Four regional testing centres (RTCs) in the four cosmopolitan towns have been set up to upgrade the quality of the small scale sector in the fields of mechanical, electrical, metallurgical and chemical disciplines. In addition, 17 field testing stations under RTCs have been set up to cater to the testing quality control requirements of the industry in remote areas. An electronic service and training centre is in the process of being set up at Ramnagar in UP.

CREDIT FACILITIES

The credit provided by banks to small scale industries is treated as credit to 'priority sector'. The commercial banks are required to lend 40 per cent of their total loans to the priority sector of which 15 to 16 per cent is required to be in the form of direct agricultural advances and the rest can be to small scale industry, small business, small transport operators, indirect agricultural loans, etc. As at the end of December 1985, bank credits to small scale industrial sector formed 15.3 per cent of net bank credit.

The share of the small scale sector in the total outstanding loans of the priority sector at the end of December 1985 was 35.9 per cent. The number of small scale units/borrowers assisted by the public sector banks at the end of December 1985 was about 15.67 lakh and the amount of outstanding loans to the small scale sector Rs 7,375 crore. The amount of financial assistance sanctioned by the state financial corporations to small scale industries was Rs 540 crore and the amount disbursed Rs 369 crore during 1984-85.

DISTRICT INDUSTRIES CENTRES

The Centrally-sponsored District Industries Centres (DICs) programme (launched in 1978) provides a focal point at the district level for the promotion of small, tiny village and cottage industries, widely dispersed in rural and semi-urban areas and aims at providing all essential services and support as far as practicable at pre-investment, investment and post-investment stages at the district level. The main thrust of this programme is on the development of such industrial units in rural areas and small towns of the country as would create larger employment opportunities in those areas.

The total number of approved DICs now stands at 419 which covers 428 districts. The four metropolitan cities are outside the purview of DIC programme. One DIC in Tamil Nadu has been sanctioned from 1 April 1986.

The DIC programme will be continued during the Seventh Plan and the share of the Central government has been raised to Rs four lakh per DIC per year from April 1985. During 1985-86, 3.60 lakh small and artisan-based units have been established in the country providing additional employment opportunities to 11.77 lakh persons.

SELF-EMPLOYMENT FOR EDUCATED UNEMPLOYED YOUTH

Recognising the important role of the district industries centre (DIC) as a nodal agency for implementation of industrial development programme, a new scheme announced by the Government for providing self-employment opportunities to educated unemployed youth has been entrusted to DICs for implementation. Under this scheme, DICs assist educated unemployed youth, falling in the age group 18-35 and having passed matriculation and above to get self-employment through industry, service and small business routes. A task force has been constituted in each district under the DIC consisting of lead bank, SSI and employment service to identify the beneficiaries. The identified beneficiaries are entitled to get a composite loan up to Rs 25,000. The rate of interest on the loan is 10 per cent per annum in backward areas and 12 per cent per annum in other areas. The assistance from the Government is in the shape of an outright capital subsidy to the extent of 25 per cent of the loan contracted by the entrepreneur from the bank. The subsidy is released to the banks after disbursement of the loan which is to be kept as fixed deposit in the name of the borrower. After recovery of 3/4 of the loan, the balance of 1/4 is to be adjusted by the banks against the deposits in the name of the borrower.

The scheme was extended during 1984-85 with the modification that a minimum of 50 per cent should be through industry route and not more than 30 per cent cases should be sanctioned for small business. In hilly areas of the country, the ceiling for industry has been reduced to 30 per cent and no upper ceiling for business is enforced.

DIC task force was also expanded by inclusion of two more leading banks of the district. The scheme has now been included in the Seventh Plan from 1986-87.

NIESBUD

A National Board for Entrepreneurial Development and a National Institute for Entrepreneurship and Small Business Development (NIESBUD) were established in 1983 for laying down policies, reviewing the programmes and coordinating the activities and programmes of various agencies in the field of entrepreneurship development of different target groups. The Institute has been organising and conducting training programmes for motivators, trainers and entrepreneurs, preparing model syllabus of training of various groups of entrepreneurs in the country, holding examinations and tests, undertaking documentation and research in the field of entrepreneurship and small business development and conducting seminars, workshops and conferences, etc., for officers/motivators in the field of entrepreneurial and business development. The Institute, as an apex national level institute, has been serving as a forum for interaction and exchange of views on EDPs.

NSIC

National Small Industries Corporation Ltd. (NSIC), set up in 1955, supplies machinery to small scale units on hire-purchase basis and assists them in procuring orders from government departments and offices. It also helps the small scale units in the procurement of scarce and imported raw materials and marketing their products at home and abroad. The NSIC exports turn-key projects to other developing countries of the world. In addition, the Corporation imparts training in several technical trades in its prototype development-cum-training centres (PDTCs) at Okhla (New Delhi), Howrah, Rajkot and Madras. These PDTCs also develop prototypes of machines and equipment and transfer these to small scale units for commercial production.

NATIONAL AWARDS

The Government has introduced a scheme since 1983 for giving national awards annually for recognising and promoting entrepreneurship in the small scale sector. The first three all-India awards carry a cash prize of Rs 25,000, Rs 20,000 and Rs 15,000 respectively. A special recognition award with the prize money of Rs 10,000 is being conferred on the entrepreneur in the small scale industries in each state/union territory in recognition of his outstanding performance in this sector. A new scheme has been introduced from 1986-87 for small scale units for quality production of goods from out of selected industry products groups. The awards carry cash prizes of Rs 15,000 and Rs 10,000 (for first and second), a trophy and a citation.

SICK INDUSTRIES

The policy framework in respect of measures to deal with the problem of industrial sickness has been laid down in the guidelines issued in October 1981, (which were subsequently modified in February 1982) for guidance of administrative ministries of the Central government, state governments and financial institutions. The salient features of these guidelines are as under: (i) the administrative ministries in the Government will have specific responsibility for prevention and remedial action in relation to sickness in industrial sector within their respective charge. They will have a central role in monitoring sickness and coordinating action for revival and rehabilitation of sick units. In suitable cases, they will also establish standing committees for major industrial sectors where sickness is widespread; (ii) the financial institutions will strengthen the monitoring system so that it is possible to take timely corrective action to prevent incipient sickness. They will obtain periodical returns from the assisted units and from the directors nominated by them on the boards of such units. These will be analysed by Industrial Development Bank and results of analysis conveyed to the financial institutions concerned and the Government; (iii) the financial institutions and banks will initiate necessary corrective action for sick or incipient sick units based on a diagnostic study. In case of growing sickness, the financial institutions will also consider assumption of management responsibility where they are confident of restoring a unit to health. The Ministry of Finance will issue suitable guidelines for takeover of management; (iv) where banks and financial institutions are unable to prevent sickness or ensure revival of a sick unit, they will deal with their outstanding dues to the unit in accordance with the normal banking procedures. However, before doing so, they will report the matter to the Government who will decide whether the unit should be nationalised or whether any other alternative including workers' participation in the management can revive the undertaking; (v) where it is decided to nationalise the undertaking, its management may be taken over under the provisions of the Industries (Development and Regulation) Act, 1951 for a period of six months to enable the Government to take necesesary steps for nationalisation, and (vi) the industrial undertakings presently being managed under the provisions of the Industries (Development and Regulation) Act, 1951, will also be dealt with, in accordance with the above principles.

CONCESSIONS

The Government has also provided certain concessions to assist revival of sick units without direct intervention. These are: (i) the Government had amended the Income Tax Act in 1977 by addition of Section 72A by which tax benefit can be given to healthy units when they take over the sick units by amalgamation with a view to reviving them. The tax benefit is in the form of carry forward of the accumulated business losses and un-provided depreciation of the sick companies by the healthy companies after amalgamation; (ii) a scheme for provisions of margin money to sick units in the small scale sector at soft terms to enable them to obtain necessary funds from banks and financial institutions to implement their revival has been introduced from 1 January 1982. The limit of the scheme has now been raised from Rs 20,000 to Rs 50,000; (iii) the Small Scale Industries Development Fund set up by the IDBI in May 1986 provides for rehabilitation assistance to sick SSI units financed by commercial banks, state financial corporations and state SIDCs, and (iv) financial assistance is also available to potentially viable sick SSI units from the National Equity Fund set up in the IDBI in August 1987.

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The Government has also provided certain concessions to assist revival of sick units without direct intervention. These are: (i) the Government had amended the Income Tax Act in 1977 by addition of Section 72A by which tax benefit can be given to healthy units when they take over the sick units by amalgamation with a view to reviving them. The tax benefit is in the form of carry forward of the accumulated business losses and un-provided depreciation of the sick companies by the healthy companies after amalgamation; (ii) a scheme for provisions of margin money to sick units in the small scale sector at soft terms to enable them to obtain necessary funds from banks and financial institutions to implement their revival has been introduced from 1 January 1982. The limit of the scheme has now been raised from Rs 20,000 to Rs 50,000; (iii) the Small Scale Industries Development Fund set up by the IDBI in May 1986 provides for rehabilitation assistance to sick SSI units financed by commercial banks, state financial corporations and state SIDCs, and (iv) financial assistance is also available to potentially viable sick SSI units from the National Equity Fund set up in the IDBI in August 1987.

Sick Industrial Companies (Special Provisions) Act, 1985 has been enacted. It provides *inter-alia,* for timely identification of sick and potentially sick units. In pursuance of this Act, a quasi-judicial body known as the Board for Industrial and Financial Reconstruction (BIFR) has been constituted and it has become fully operational from 15 May 1985. This step would help in detecting, preventing as well as taking ameliorative, remedial and such other measures with respect to sick and potentially viable units.

The Reserve Bank of India has set up a Special Cell as a clearing house for information and also to act as coordinating agency between the Government, banks, financial institutions and other agencies. It has issued guidelines for detection and remedial steps to be taken in respect of sick units. State level inter-institutional committees have been set up to render assistance to sick units in a coordinated manner. Banks and financial institutions prepare rehabilitation schemes on the basis of diagnostic studies providing, *inter-alia,* for reconstruction of capital, funding of interest liabilities, capital and working capital loans on soft terms, management support, relief or re-scheduling of debt service liabilities, etc. Assistance is also available under Technical Development Fund and the Import Policy for import of capital goods for modernisation and replacement of obsolete plant and machinery. Government has also set up the Textile Modernisation Fund and the Jute Modernisation Fund in the textile and jute sectors, under which weak and sick but potentially viable units can avail of assistance. Central/state governments provide fiscal and other reliefs and concessions when any industry shows signs of strain. These are in the form of excise duty relief, relaxation of control orders (as in case of paper and cement), soft loan scheme for modernisation/diversification, liberal import facilities for import of raw materials, selective tariff protection, sales tax relief, electricity charges, etc.

21 Commerce

EXTERNAL TRADE

WITH the impressive industrial development since 1947, India's foreign trade has undergone a complete change and is no longer confined to a few countries trading in a few commodities. India now has trading links with practically all the countries of the world. The number of commodities being traded in India's foreign trade for both export and import are now nearly 6,660. The exports cover a wide range of items of agricultural and industrial sectors and various handicrafts, handloom, cottage and craft articles. Project exports which include consultancy, civil construction and turn-key contracts have also made a significant progress in recent years.

Similarly, there has been a substantial increase in import on account of development and needs of the economy. The bulk of imports now consists of sophisticated machines, scarce raw materials, lubricants, oils and fertilisers which are essential for the country's industrial and agricultural development. In the last few years, the country has been having a large adverse balance of trade on account of heavy imports on one hand and steep hike in world prices of major imports on the other.

VALUE OF FOREIGN TRADE

The total turnover of India's foreign trade (imports plus exports including re-exports) has been steadily rising since the beginning of the planning era in India. The value of trade has increased considerably since 1950-51 till 1987-88. The value of imports, exports, total trade and balance of trade for selected years since 1950-51 is given in table 21.1.

The difficult international trading environment characterised by slow-down in some of the major economies of the world, stagnation and increasing protectionist barriers by the developed countries adversely affected India's export during 1985-86. This is reflected in the decline of overall exports by 7.2 per cent during 1985-86 as compared to 1984-85. Apart from the international trading environment, an important factor contributing to the decline in overall exports during 1985-86 was the virtual stoppage of crude oil. While export of crude oil during 1985-86 was only Rs 135.15 crore, it amounted to Rs 1,563 crore during 1984-85. However non-crude oil exports registered an increase of 5.7 per cent during 1985-86 as compared to 1984-85.

India's foreign trade situation showed a distinct improvement in 1986-87, which was further sustained in 1987-88 as well. India's overall exports registered an increase of 15.4 per cent in 1986-87 and further 25.2 per cent in 1987-88, as compared to the corresponding periods of previous years. India's imports registered an increase of 2.8 per cent in 1986-87 and 11.5 per cent in 1987-88. Consequently, India's trade deficit declined from Rs 8,763 crore during 1985-86 to Rs 7,631 crore during 1986-87 and further to Rs 6,658 crore during 1987-88.

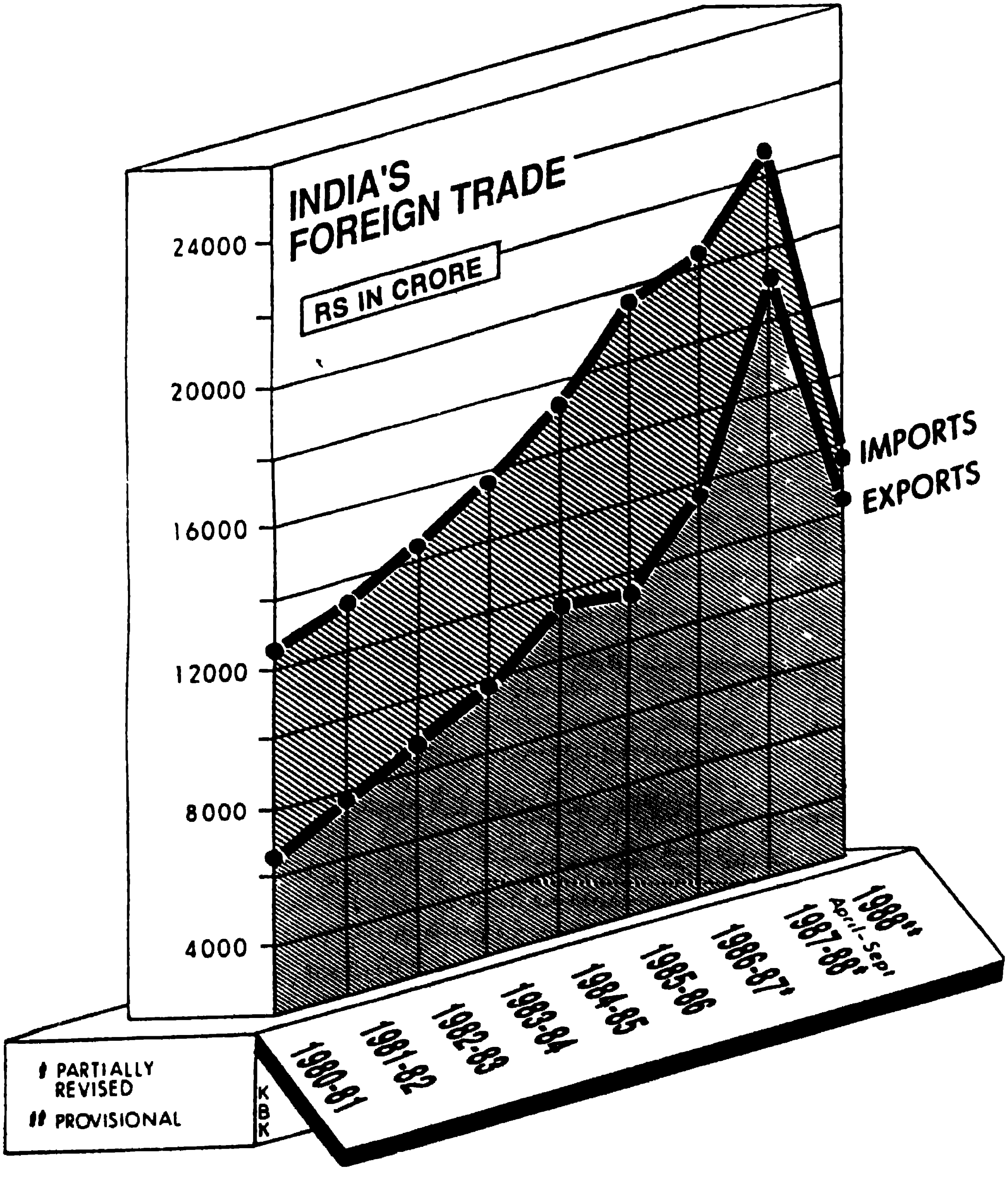
INDIA'S FOREIGN TRADE
RS IN CRORE
24000
20000
16000
12000
8000
4000
IMPORTS
EXPORTS
1980-81
1981-82
1982-83
1983-84
1984-85
1985-86
1986-87*
1987-88*
1988** April-Sept
* PARTIALLY REVISED
** PROVISIONAL
KBK

TABLE 21.1 FOREIGN TRADE OF INDIA

(Rs crore)

YEAR	Imports	Exports	Total value of foreign trade	Balance of trade
1950-51	581.17	606.81	1,187.98	+ 25.64
1960-61	1,121 62	642.39	1,764.01	− 479.23
1970-71	1,634.20	1,535.16	3,169.36	− 99.04
1980-81	12,549 15	6,710.71	19,259.86	−5,838.44
1981-82	13,607 55	7,805 91	21,413.46	−5,801 64
1982-83	14,292 74	8,803.37	23,096.11	−5,489.37
1983-84	15,831 46	9,770 71	25,602 17	−6,060.75
1984-85	17,134 20	11,743 68	28,877 88	−5,390.52
1985-86	19,657 69	10,894 59	30,552 28	−8,763.10
1986-87[1]	20,200.65	12,569.33	32,769.98	−7,631.32
1987-88[2]	22,398 97	15,741.23	38,140.20	−6,657.74
1988-89[3]	20,528.38	13,926.68	34,455.06	−6,601.70

1 Revised estimate

2. Partially revised estimate

3. Provisonal for April-December 1988

IMPORT-EXPORT POLICY 1988-91

The major objectives of the new Import-Export Policy 1988-91, are to stimulate industrial growth, to promote efficient import substitution and self-reliance, to provide renewed impetus to export promotion by improving the quantity of incentives and their administration and to simplify and rationalise policy and procedures. The new Policy lays greater emphasis on modernisation and technological upgradation for making our industry progressively more competitive.

Several additional measures have been announced for increasing exports by making them more attractive and viable. The import replenishment licenses will be automatically endorsed for import of limited permissible and canalised items. The scope of export products qualifying for import replenishment has been widened. The list of items that can be imported under Open General License has also been expanded. For meeting the requirements of machinery for modernisation and technological upgradation, as well as for meeting the requirements for export production, 99 items of machinery have been added to the list of Open General License.

One of the important innovations of the new Policy is to encourage 'indirect exporters' who provide inputs to the final exporters. Provisions have been made in the Policy to make indirect exporters internationally competitive which would lead to saving of foreign exchange, greater value addition and better capacity utilisation of domestic industry.

In order to develop strong marketing organisations which have necessary infrastructure and the capabilities for boosting exports, the scheme of export houses and trading houses has been modified to provide more facilities and incentives.

DIRECTION OF EXTERNAL TRADE

India is having export and import trade with all the regions of the world, developing and developed. She is trying to develop her economic and trade relations through bilateral negotiations and various promotional activities.

The direction of India's exports and imports from different regions/sub-regions is outlined in table 21.2.

TABLE 21.2 DIRECTION OF INDIA'S FOREIGN TRADE

(Rs crore)

Regions/sub-regions	EXPORTS			IMPORTS		
	1986-87[1]	1987-88[1]	1988-89[2]	1986-87[1]	1987-88[1]	1988-89[2]
A. WEST EUROPE	3,108.55	4,360.36	3,721.61	7,561.80	8,376.30	7,235.24
(a) European Common Market	2,717.98	3,954.94	3,355.10	6,295.33	7,430.63	6,398.82
(b) European Free Trade Area Countries	289.93	364.90	299.88	904.29	825.53	610.79
(c) Other West Europe	100.64	40.52	66.63	362.18	120.44	225.63
B. ASIA AND OCENIA	3,831.52	4.610.84	4,401.52	7,251.17	8,629.41	7,890.37
(a) ESCAP	2,946.29	3,531.01	3,437.12	5,059.47	4,980.68	4,594.85
(b) Rest of Asia and Oceania	885.23	1,079.83	964.40	2,191.70	3,648.73	3,295.52
C. AFRICA	336.37	384.26	377.20	873.57	686.35	817.90
D. AMERICA	2,541.85	3,122.41	2,863.17	2,766.37	2,855.06	3,146.22
(a) North America	2,506.74	3,076.63	2,773.98	2,343.38	2,316.84	2,724.84
(b) South America	15.69	15.26	51.56	377.11	450.08	351.89
(c) Other America	19.42	30.52	37.73	45.88	88.14	69.49
E. EAST EUROPE	2,390.19	2,592.71	2,200.47	1,609.66	1,795.60	1,391.41
Grand total (A+B+C+D+E)	12,208.48	15,060.58	13,563.97	20,062.57	23,343.02	27,716.38

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[1] Provisional.

[2] Provisional for April-December 1988

United States, Japan and Soviet Union remained on top as India's three major trading partners during 1987-88. India's total trade turnover with USA during 1987-88 was of the order of Rs 4,921 crore comprising exports worth Rs 2,906 crore and imports worth Rs 2,015 crore. The total trade with Japan was valued at Rs 3,729 crore (exports Rs 1,615 crore and imports Rs 2,114 crore), and in the case of Soviet Union, the total trade turnover was Rs 3,250 crore (exports Rs 1,971 crore and imports Rs 1,279 crore). Besides these three major trading partners, the other important markets for Indian goods include Federal Republic of Germany, United Kingdom, Belgium, France, Italy and the Netherlands among the ECM countries; Saudi Arabia, UAE and Kuwait in the West Asia region and Hongkong, Malaysia, Singapore and Australia in the ESCAP region.

EXPORTS

The exports have not only grown appreciably, but have also witnessed an increasing diversification over the years. The increase has been well-spread over a number of commodities such as capital goods and other engineering items, chemicals and chemical products, leather and leather manufactures, garments, cotton fabrics, rayon and woollen textiles, gems and jewellery, handicrafts, hand-made carpets, processed foods and marine products. Emphasis has also been laid on the export of traditional items such as agricultural items (mainly cereals), ores and minerals and plantation crops.

Among the dynamic sectors, exports of gems and jewellery went up from Rs 44 crore in 1971-72 to Rs 2,614 crore in 1987-88, readymade garments from Rs 14 crore to Rs 1,791 crore, engineering goods from Rs 122 crore to Rs 1,432 crore, leather and leather manufactures from Rs 102 crore to Rs 1,148 crore, chemicals and related products from Rs 30 crore to Rs 823 crore, marine products from Rs 41 crore to Rs 525 crore and hand-made carpets from Rs 12 crore to Rs 391 crore. The export performance of principal commodities during 1988 as compared to 1986-87 and 1987-88 are outlined in table 21.3.

IMPORTS

The items of import which registered an increase during 1987-88 include petroleum and petroleum products (by Rs 1,189 crore as compared to 1986-87), pearls, precious and semi-precious stones (by Rs 499 crore), edible oils (by Rs 304 crore), electrical machinery (by Rs 234 crore), non-ferrous metals (by Rs 161 crore) and artificial resins, plastic materials, etc., (by Rs 112 crore). Other items of import of which increased are paper, paper board and manufactures (including newsprint), textile yarn and fabrics, chemical material and products, metalliferrous ores and metal scraps, transport equipment, etc.

The major items which displayed a fall in import include manufactured fertilisers, non-electrical machinery, iron and steel and manufactures of metal, besides sugar, medicinal and pharmaceutical products and synthetic fibres.

TABLE 21.3 EXPORTS BY MAJOR COMMODITY GROUPS

(Rs crore)

Sl. No.	Commodity	1986-87[1]	1987-88[1]	Percentage change 1987-88	April-September[2]	
				1986-87	1987	1988
1.	Cashew kernels	327.6	306.7	—6.4	212.2	154.0
2.	Coffee and coffee substitutes	296.7	263.2	—11.3	166.7	140.9
3.	Fish and fish preparations	539.0	525.1	—2.6	258.0	290.6
4.	Oil cakes	189.8	173.3	—8.7	80.1	79.8
5.	Raw cotton	204.7	95.5	—53.3	83.8	13.5
6.	Rice	197.3	324.6	64.5	145.6	155.1
7.	Spices	279.0	309.3	10.8	146.6	155.7
8.	Sugar	1.4	0.8	—47.2	0.2	0.6
9.	Tea and mate	576.8	592.4	2.7	267.1	280.9
10.	Tobacco	185.3	134.6	—27.4	103.6	76.3
11.	Iron ore	546.6	542.8	—0.7	251.0	282.7
12.	Engineering goods[3]	1,132.7	1,433.0	26.5	606.9	961.8
13.	Chemicals and allied products	583.2	823.4	41.2	329.7	687.5
14.	Cotton fabrics	637.3	1,063.8	66.9	466.3	503.5
15.	Jute manufactures	244.0	242.8	—0.5	101.3	110.3
16.	Leather and leather manufactures including footwear	922.4	1,148.5	24.5	491.3	695.6
17.	Readymade garments	1,330.5	1,792.1	34.7	779.4	879.8
18.	Handicrafts	2,547.6	3,253.3	27.7	1,522.5	2,227.6

TABLE 21.3 (Continued)

Sl. No.	Commodity	1986-87[1]	1987-88[1]	Percentage change 1987-88	April-September[2]	
				1986-87	1987	1988
	Of which:					
	Gems and jewellery	2,074.3	2,613.5	26.0	1,251.2	1,845.4
19.	Others	1,710.5	2,716.2	58.8	1,399.0	1,291.0
	Of which:					
	Petroleum Products	411.2	648.7	57.8	373.1	253.6
	Total	13,805.2	19,003.6	26.2	9,035.6	12,085.2

1. Provisional
2. Partially revised
3. Includes machinery and transport equipment and metal manufactures including iron and steel.

Source: Economic Survey 1988-89.

Efforts have been made to restrict the imports only to essential items, so that the balance of trade could be improved, while at the same time, taking due care not to adversely affect the investment needs of the growing economy. The principal imports during 1988, as compared to 1986-87 and 1987-88 are given in table 21.4.

EXPORT PROMOTION

In order to promote exports, the Government has initiated several institutional, infrastructural and fiscal measures. The objective of the Government is to promote exports to the maximum but in such a manner that the economy of the country is not affected by unregulated exports of items essentially needed within the country. Export control is, therefore, exercised in respect of limited number of items the supply position of which demands that their exports should be regulated in the larger interests of the country.

Cash Compensatory Scheme (CCS) is an important instrument of export promotion. CCS is allowed on a selective basis primarily with the objective of compensating the exporters (for the elements of unrefunded taxes and duties paid on the inputs required) for the manufacture of goods exported. The Duty Drawback Scheme in which exporters are allowed reimbursement of customs and central excise duties paid on raw material components and packaging material used in the manufacture of packaging of export products, has been further modified so as to facilitate quicker payments of duty drawback claims. In order to step up export production, large export houses and companies covered under FERA (Foreign Exchange Regulation Act) have been allowed to set up capacities outside the list of industries included in the Appendix of the Industrial Policy of 2 February 1973.

Several steps have been initiated to provide requisite transport facilities for exports. Inland exporters can complete all export formalities and hand over their cargo containers at inland container depots (ICDs) established at Delhi, Bangalore, Coimbatore, Anaparty, Guntur, Guwahati and Ludhiana. These ICDs will confer all the facilities of dry port as well as facilitate the movement of exports and imports by ISO containers. A specialised Export-Import Bank (EXIM) has been set up to facilitate export finance.

EXPORT PROCESSING ZONES

Export processing zones have emerged as effective instruments to boost exports of manufactured products, especially to developing countries. The zones are intended to provide an internationally competitive duty-free environment for export production. India has six such export processing zones, of which four have been developed recently. The quantum of exports from these zones is given in table 21.5.

PLANTATION SECTOR

Plantation sector plays an important role in the economy as well as in foreign

TABLE 21.4 IMPORTS BY MAJOR COMMODITY GROUPS

(Rs crore)

Sl. No	Commodity	1986-87[2]	1987-88[2]	Percentage change 1987-88	April-September[1]	
				1986-87	1987	1988
1.	Capital goods[3]	5,467.3	6,284.9	15.0	2,878.2	3,234.1
2.	Cereals and cereal preparations	47.0	32.7	—30.5	10.8	156.6
3.	Chemical materials and products	119.6	173.6	45.1	70.4	89.7
4.	Edible oils	612.0	920.0	50.3	333.6	510.0
5.	Fertiliser crude	131.1	138.4	5.6	65.0	70.8
6.	Fertiliser finished	495.1	171.5	—65.4	55.2	167.0
7.	Iron and steel	1,449.7	1,273.2	—12.2	558.3	784.3
8.	Medical and pharmaceutical products	158.0	137.1	—13.2	57.5	97.7
9.	Non-metallic mineral manufactures excluding pearls	85.1	83.7	—1.6	24.4	70.4
10.	Non-ferrous metals	414.9	576.1	38.9	207.0	396.4
11.	Organic and inorganic chemicals	1,035.7	1,050.5	1.4	459.0	908.0
12.	Paper, paper board and manufactures thereof	194.8	258.1	32.5	93.9	139.8
13.	Pearls, precious and semi-precious stones	1,495.5	1,994.2	33.3	946.7	1,536.4
14.	Petroleum, petroleum products and related material (gross)	2,796.7	4,082.8	46.0	1,872.7	2,105.2
15.	Professional, scientific, controlling instruments, photographic optical goods, watches and clocks	455.6	490.6	7.7	211.4	307.7
16.	Synthetic and regenerated fibres	44.1	28.4	—35.6	11.2	16.8
17.	Others	5,198.4	4,703.2	—9.5	2,543.7	2,573.4
	Total	20,200.6	22,399.0	10.9	10,389.0	13,164.3

1. Provisional.
2. Partially revised.
3. Includes manufactures of metals, machinery (including electrical machinery), transport equipment and project goods.

Source: Economic Survey 1988-89.

TABLE 21.5 EXPORTS FROM EXCLUSIVE ZONES

(Rs crore)

Sl. No.	Export Processing Zone	1986-87	1987-88	1988 (April-December)	No. of units working (1988)
1.	Kandla	236.27	185.05	198.33	108
2.	Santacruz	102.36	110.14	125.85	77
3.	Cochin	—	4.88	4.19	6
4.	Madras	—	27.00	13.07	28
5.	Falta	—	8.05	4.09	4
6.	Noida	—	23.12	16.23	22
	Total	338.63	358.24	361.76	245

trade of India. Tea, coffee, tobacco, rubber and cardamom are among the important plantation crops.

TEA

India is world's largest producer, consumer and exporter of black tea. During 1987, tea production was estimated at 67.3 crore kg. India is the only producer which manufactures both CTC and Orthodox tea in substantial quantitites. India's production of CTC tea is estimated to be of the order of 50.7 crore kg, most of which is consumed at home. Orthodox tea has more flavour but gives lesser cuppage.

Ninety eight per cent of India's tea production comes from Assam, West Bengal, Kerala and Tamil Nadu. India has more than doubled its production since independence, mainly by increasing yield through use of improved planting-material and optimal use of inputs. Tea is mainly a labour-intensive industry, providing employment to over 10 lakh persons directly and another 10 lakh persons indirectly by way of ancillary occupations. Tea is a significant export earner for India. During 1987-88, 20.9 crore kg of tea valued at Rs 639 crore was exported.

Tea Board, set up under the Tea Act, 1953 promotes the development of tea industry. The Board comprises a chairman and 30 other members representing owners of tea estates, persons employed in tea estates, manufacturers and dealers of tea consumers, Members of Parliament and governments of principal tea growing states.

Tea Trading Corporation of India (TTCI) was established in 1971 to create a suitable export market for Indian tea, particularly in the value added form, namely, packaged tea, tea packet, instant tea, etc. Other activities of the

Corporation include marketing of tea for domestic consumption, management of tea gardens, warehousing of tea and establishment of other facilities beneficial to the tea industry. The TTCI has been converted into a subsidiary of State Trading Corporation (STC).

COFFEE

Coffee cultivation is mainly confined to three southern states, namely, Karnataka, Kerala and Tamil Nadu. Non-traditional coffee growing states are Andhra Pradesh, Orissa and all the states of north-eastern region. The area under cultivation has increased from 1.71 lakh hectares in 1978 to 2.40 lakh hectares in 1985-86. About 97.8 per cent of coffee holdings are small holdings of less than 10 hectares. The average productivity has increased from 452 kg per hectare in 1983-84 to 508 kg per hectare (provisional) in 1985-86. Coffee crop observes cyclic nature of production, wherein peak production season is followed by a lean one. Production of coffee during 1988-89 is estimated to be two lakh tonnes as compared to an estimate of 1.22 lakh tonnes in 1987-88. The exports of coffee during 1987-88 were of the order of 88,914 tonnes valued at Rs 248.97 crore.

Coffee Board, which is responsible for the development of coffee industry has undertaken the coffee development plan to improve the yield and quality of coffee. For this purpose, it advances loans to coffee growers. Under the Coffee Act, all coffee produced is compulsorily pooled with the Coffee Board for sale and disposal. Coffee sales in domestic markets are mainly through domestic auctions and reserve price is based on minimum release price. Coffee meant for exports is sold in separate export auctions and reserve price is based on London terminal price. This unique mechanism of coffee pooling and separate auction system for domestic sales and export sales has helped in providing fair returns to the growers.

TOBACCO

India is the third largest producer of unmanufactured tobacco and the fifth largest exporter of tobacco in the world. During 1986-87, production of tobacco is provisionally estimated to be 4.60 lakh tonnes, out of which 1.06 lakh tonnes was the production of Virginia tobacco. About 80-85 per cent of the exports of tobacco are Virginia Flue Curod(VFC) tobacco. During 1987-88, 42,408 growers have been registered for an area of 86,674.48 hectares. The exports of tobacco and tobacco products in 1987-88 were of the order of Rs 116.30 crore.

Tobacco Board is vested with the responsibility of regulating the production of Virginia tobacco and its marketing to ensure a fair and remunerative price to growers and promotion of exports of tobacco and tobacco products.

RUBBER

Rubber is a basic important raw material required for the manufacture of a variety of products. Rubber is mainly grown in southern states, namely, Kerala, Tamil Nadu and Karnataka. The total area under rubber cultivation has increased from 63,000 hectares in 1947-48 to 3.98 lakh hectares in 1987-88. The average yield per hectare of rubber plantation is currently around 944 kg. Rubber plantations are dominated by small holders numbering 3.60 lakh and they share about 80 per cent of total rubber area. With a view to giving relief to the industry and a review of the demand supply position of natural rubber, import of rubber is allowed since 1978-79. The production and consumption of natural rubber during 1987-88 is estimated at 2.35 lakh tonnes and 2.87 lakh tonnes respectively. The Rubber Board looks after the development of rubber industry.

CARDAMOM

At present, the cultivation of cardamom is largely confined to Kerala, Tamil Nadu and Karnataka. It is estimated that an area of around one lakh hectares is under cardamom cultivation in the country. The production of small cardamom in 1987-88 was 2,900 tonnes. The production of cardamom (small) during 1988-89 is estimated at around 4,100 tonnes. During 1987-88, 270 tonnes of cardamom worth Rs 3.40 crore with a unit value of Rs 125.9 per kg were exported. The Spices Board constituted under the Spices Board Act, 1986 looks after the cardamom industry in all its spheres, *viz.*, production, marketing, exports, research, etc., and export promotion of spices.

COMMERCIAL RELATIONS

Continous efforts are being made to foster India's economic and commercial relations with other countries. There are at present 66 commercial offices attached to Indian missions abroad including the Ambassador of India to GATT (General Agreement of Tariff and Trade) who is also Deputy Permanent Representative to UNCTAD (United Nations Conference on Trade and Development) in the Permanent Mission of India, Geneva. These commercial offices/representatives function under the budgetary control of the Ministry of Commerce and have a vital role to play in the promotion of India's trade and economic relations abroad. Apart from advising and assisting the Head of Mission on all commercial and economic matters, the commercial representatives also assist the Government in the formulation of its trade and economic policies through regular feedbacks on market trends, trade promotion prospects and general economic situation of the country in which they are accredited. In order to keep our commercial representatives informed of important developments in the exports and economic sphere, a system of monthly newsletter from the Ministry to the missions was introduced with effect from June 1984.

SOUTH ASIAN REGION

South Asian region includes India's neighbouring countries such as

Afghanistan, Pakistan, Nepal, Sri Lanka, Maldives, Bhutan and also Iran. The total trade with the South Asian countries (excluding Bhutan) during 1987-88 was Rs 820 crore against Rs 771.52 crore in 1986-87. The balance of trade was in India's favour in 1987-88 by Rs 335.46 crore. This is mainly due to decline in import of crude oil from Iran. Various delegations, from the private sector and at the official level, are exchanged with a view to identifying areas of mutual interest and to remove constraints in the promotion of exports to these countries.

The trade between India and Afghanistan is conducted in freely convertible currencies in terms of a trade agreement signed on 24 June 1978. An Indian trade delegation visited Kabul in March 1988 for renewal of the Memorandum of Understanding (MOU) for fresh fruit imports. The Indo-Afghan Standing Committee on Trade met in June 1988 in order to promote two-way trade, particularly the export of non-traditional items from India. India participated in the Teheran International Trade Fair in October 1988. Indian companies and organisations are seeking to participate in the post-war reconstruction work in Iran.

Trade between India and Pakistan is taking place in accordance with the export-import policy and prescribed procedures of the two countries, in the absence of a new trade agreement. The Government of Pakistan in April 1988, notified a list of 24 items that can be imported from India by private parties in Pakistan. Trade with Bangladesh is conducted under the Trade Agreement of 1980 which provides for trade on most favoured nations (MFN) terms in freely convertible currencies and also for a review of the progress of trade at intervals of six months.

India's trade with Nepal was regulated by the Indo-Nepal Treaties of Trade and Agreement for Cooperation to control unauthorised trade, signed in 1978. These treaties have since expired recently and the same are under review.

Trade with Sri Lanka is governed by the trade agreement signed in 1961 which is still in force. The agreement is of a general nature and provides that it shall remain in force until it is modified or terminated by either contracting party on giving three months' notice to the other party. The 1987 Indo-Sri Lanka agreement has also boosted the commercial relations between the two countries. Indian exports to Maldives comprise consumer items, machinery and equipment, foodstuffs and vegetables and essential commodities like sugar. The State Trading Corporation of India Ltd. has been identified as the nodal agency for undertaking exports to the Maldives. A bilateral trade agreement was signed between the two countries on economic and technical cooperation in February 1986.

EAST ASIA

East Asia region comprises 27 countries including industrialised countries, such as Japan, Australia and New Zealand, and the newly industrialised countries, namely, Hong Kong, Singapore, Republic of Korea, etc. India's exports to the East Asia region during 1987-88 were provisionally valued at Rs 3,069.57 crore whereas imports were valued at Rs 4,943.65 crore. India had been consistently enjoying a favourable balance of trade with the region as a whole until 1978-79. Thereafter, the trade balance had become adverse due to bulk imports of palm oil, wool, electronic goods, natural rubber, zinc, lead, cement, fertilisers, cooking coal, wheat, pig iron, steel structurals, wheels and axles, etc. The main items of our export to this region have been textiles, garments, cotton, ores and concentrates, tea, coffee, marine products, leather and leather manufactures, engineering goods, etc. There is now an uptrend in our export of engineering goods to developed markets like Japan and Australia.

Japan is India's third largest trading partner in the world and the largest in the East Asia region. It has been identified as one of the major thrust markets for special attention for increasing Indian exports. The Republic of Korea is another country in the region identified as thrust market with considerable potential for increased Indian exports.

India-Indonesia Joint Business Council met in November 1988 and identified measures required for expansion of bilateral trade. With Malaysia, India has worked out an arrangement through which companies will be awarded projects through the Minerals and Metals Trading Corporation/State Trading Corporation Consortium and help reduce the trade gap which is adverse to India. The Joint Trade Committee between India and Thailand met in March 1988 in Bangkok to review the trade and economic relations. In order to promote trade and economic relations with Singapore, the Federation of Indian Chambers of Commerce and Industry (FICCI), has entered into a joint business cooperation agreement with Singapore Chambers of Commerce and Industry in January 1988.

An Indian trade delegation visited China in June 1988 and signed a trade protocol for the year 1988-89. New items have been included in the list of items for import/export between the two countries. The Indo-Australia bilateral trade during 1987-88 was of the order of Rs 677.84 crore as compared to Rs 578.31 crore in 1986-87. The exports during 1987-88 were of the order of Rs 181.05 crore (provisional) as compared to Rs 147.28 crore during 1986-87, thus registering an increase of 23 per cent.

WEST ASIA AND NORTH AFRICA

West Asian and North African countries occupy an important position in India's trade. In 1987-88, India's exports to this region were of the order of Rs 1,093.32 crore as compared to imports of Rs 3,703.84 crore. The balance of trade is not in favour of India because of the import of large quantities of crude oil from this region. This region is also an important source of supply of some of the industrial raw materials required in India, *viz.*, fertilisers, rock phosphate, etc. This region holds considerable promise for the growth of India's exports particularly in engineering, agricultural products and gems and jewellery.

India has trade agreements with several countries of this region. These are: Egypt, Iraq, Jordan, Kuwait, Libya, Morocco, People's Democratic Republic of

Yemen, Syria, and Tunisia. India is also having joint commissions with some of these countries with a view to devising measures for improving and diversifying trade flow in this region.

AFRICA (SOUTH SAHARA)

India has taken several measures designed to increase trade, bilateral cooperation and joint ventures with sub-Saharan African countries. Prominent measures undertaken include exchanging trade delegations at Ministerial and official levels; having joint committee/joint commission meetings; participating in fairs and exhibitions and organising exclusive Indian fairs.

Trade agreements have also been signed with various sub-Saharan countries to provide an institutional mechanism for promoting trade. So far, such trade agreements have been signed with 12 such countries, namely, Ethiopia, Ghana, Angola, Kenya, Liberia, Senegal, Uganda, Zimbabwe, Zambia, Mozambique, Cameroon and Zaire.

EAST EUROPE

East European region continues to hold a prominent place in India's foreign trade accounting for about 19 per cent of exports (excluding crude oil) and eight per cent of total imports during 1986-87. India's exports to the East European region over the years, have also witnessed diversification with emphasis on non-traditional and manufactured products. The Soviet Union continues to be India's one of the largest trading partners. India's exports to the Soviet Union were worth Rs 1,872.88 crore, as against imports worth Rs 1,072.21 crore during 1986-87. India has renewed trade agreements with the five Rupee Payment Area countries, *viz.*, USSR, Poland, Czechoslovakia, GDR and Romania for a further period of five years. These agreements provide for the settlement of all commercial and non-commercial transactions between India and these countries in non-convertible rupees. Under this system, the bilateral trade is to be on balanced basis where imports and exports are expected to balance over a period of time. The bilateral rupee clearing has helped India in obtaining essential raw materials and industrial goods without recourse to free foreign exchange and also in securing assured markets for exports of both traditional and non-traditional products.

Continuous efforts are being made to increase and diversify trade with various socialist countries in East Europe. Various steps like participation in trade fairs and exhibitions, exchange of commercial delegations, convening of inter-Government Joint Commission meetings and conclusion of annual trade protocols for exchange of commodities are being taken in this direction. The main items of export to the East European countries are agricultural products, manufactures, textiles and engineering goods, etc. The main items of import by India from these countries are crude oil and petroleum products, fertilisers, non-ferrous metals, newsprint, chemicals, machinery and equipment and other industrial raw materials.

WEST EUROPE

West Europe is a very significant trading area in India's foreign trade, accounting for a share of about 27.7 per cent of India's total exports (excluding crude oil) and 37.5 per cent of imports during 1987-88. It has two major economic groupings, namely, EEC, (UK, FRG, France, Italy, Belgium, the Netherlands, Luxembourg, Denmark, Ireland and Greece) and EFTA (Norway, Sweden, Finland, Austria, Switzerland and Portugal) besides some other countries like Spain, Turkey, Malta and Cyprus. One of the important features of the country's exports to West Europe is that most of the exports to this region is accounted for by just seven countries, namely, UK, FRG, the Netherlands, Italy, France, Belgium and Switzerland, indicating that most of the West European markets are still relatively unexplored. India's imports from West European block have generally been manufactured products specially plant and machinery, chemicals, steel and transport equipment whereas India's exports largely comprise traditional goods, including textiles, garments, tea, tobacco, spices, leather, gems and jewellery, handicrafts, etc.

Indian Trade Centre at Brussels is an important institution in West Europe responsible for India's export promotion. It has an important role in helping to diversify exports besides providing market intelligence and information on matters like distribution channels, quality and packing requirements, fashion trends, changing designs, etc., for the exporters in India. There are other overseas offices of various export promotion organisations like Trade Development Authority, Engineering Export Promotion Council, State Trading Corporation, located in the West European region.

India has trade agreements with most of the West European countries. The most important is the Indo-EEC agreement for commercial and economic co-operation. Besides the review of Indo-EEC economic relations in the meetings of the working groups, bilateral economic relations also came up for review at the various meetings of joint commissions/committees during the years 1987 and 1988. A computer information system is being set up at the India Trade Centre, Brussels to further streamline its working and increase its utility for trade.

NORTH AMERICA

The United States is one of the leading trade partners of India with a sizeable two-way trade and accounts for more than 18.5 per cent of exports. Major items of India's exports to USA are ready-made garments, cashew nuts, spices, coffee, carpets and to some extent leather and its products including footwear. Traditional items like tea and jute have ceased to have a prominent position in our export basket. The export of marine products, crude drugs, textile goods and engineering goods have remained stable, but have not shown any increase.

Canada is a growing market for Indian products, particularly non-traditional items. The principal export items are textiles and clothing, engineering goods, chemicals, leather and leather products, jute carpets and druggets, tea, precious stone/jewellery, spices, coffee, fruits, vegetables and handicrafts. Finished and semi-finished products are gradually replacing the traditional raw materials as items of exports to Canada.

SOUTH AMERICA

South American region comprising Latin America and Caribbean countries accounts for about 1.4 per cent of the country's external trade. India continues to be an insignificant partner of this region and has all along had an adverse balance of trade. Argentina, Brazil. Mexico, Venezuela, Trinidad and Tobago, Peru, Chile, Colombia, Cuba and Guyana have so far been India's important export markets in this region. Sizeable imports of vegetable oils have been made in recent years from Brazil and Argentina. Balancing of trade with South American region has not yet been easy because of the long distance, lack of direct sailing and lack of knowledge in these countries about India's technical and export capabilities. However, efforts are being made to improve the situation.

JOINT VENTURES ABROAD

India has set up joint ventures abroad as a part of its overall strategy to increase participation in the development process of the Third World. At the end of 1987, there were 182 joint ventures, out of which 158 were in operation and 27 were under various stages of implementation.Among the 150 Indian joint ventures that have become operational, 101 are in the manufacturing sector headed by light engineering sector followed by chemicals and pharmaceuticals and textiles sectors. The other industries in which Indian joint ventures have been set up include palm oil refining and fractionation, iron and steel products, pulp and paper, glass and glass products, food products, leather, rubber products, etc. In the non-manufacturing sector, the largest number is in the hotels and restaurants followed by trading and marketing engineering contracts and construction, consultancy, etc. The total quantum of Indian equity in joint ventures, as on 31 December 1987, was Rs 93.12 crore. Region-wise, majority of joint ventures are located in the neighbouring countries of South and East Asia followed by Africa.

PUBLIC SECTOR AGENCIES

For increasing State participation in the country's export and import trade, a number of public sector agencies have been set up.

State Trading Corporation (STC) was set up in 1956 as an autonomous corporation with the principal objective of diversifying country's foreign trade and supplementing the efforts of private trade and industry in developing India's foreign trade. In addition to discharging this principal objective, the Corporation has also been asked from time to time to undertake price support operations to protect the interests of growers, buffer stocking to ease problem of shortage of some essential items and manage various items of exports and imports channelised by the Government. The STC has achieved a turnover of Rs 3,646 crore in 1987-88. This consisted of exports worth Rs 581 crore, imports worth Rs 3.037 crore and domestic sales worth Rs 28 crore.

Project and Equipment Corporation (PEC), a subsidiary of STC, was created to give impetus to the export of engineering equipment and projects from India. It specialises in the export of railway rolling stock, heavy equipment and the execution of civil construction and turn-key projects. It identifies technological competence of manufacturers of goods and other agencies for services and ensures the fulfilment of contractual obligations in respect of quality and delivery schedules.

Tea Trading Corporation of India (TTCI) was established in 1971 to create a stable export market for Indian tea, particularly in their value added forms, namely, packaged tea, tea bags, instant tea, etc. Other activities of the Corporation include marketing of tea for domestic consumption, management of the tea gardens, warehousing of tea and establishment of other facilities beneficial to the tea industry. The TTCI has now been converted into a subsidiary of STC.

Minerals and Metals Trading Corporation of India Ltd. (MMTC) occupies a prominent place in India's foreign trade in minerals and metals. The exports of MMTC comprise mainly of iron ore, manganese ore, coal, chrome and bauxite and imports mainly of fertilisers, non-ferrous metals, industrial raw materials and steel. The Corporation has also been importing rough diamonds from producing countries and other markets for sale to Indian diamond exporters against their Registered Exporters Policy (REP) and advance imprest licenses. It has also made a modest entry in the international market for cut and polished diamonds. The MMTC has in the recent past diversified into many other areas in the form of a general trading house, and has been able to export diverse items like quartz, shellac, aluminium conductors, coffee, niger seeds, brass hardware, soya extractions, rice, tobacco, cashew, wirenails, industrial gloves, kitchen utensils, industrial screens, photocopiers and various engineering and chemical items.

Mica Trading Corporation of India Ltd. (MITCO) was set up on 1 June 1974 and is the only subsidiary of MMTC. It looks after the exports of processed mica including mica scrap and waste. More than 90 per cent of purchases of mica by MITCO are made from small dealers. To increase the exports of value added mica products in addition to processed mica, MITCO has set up a number of projects such as silvered mica and mica capacitor unit, micronised mica powder plant and mica paper unit.

Export Credit Guarantee Corporation of India Ltd. was originally set up in 1957 as Export Risk Insurance Corporation. Later on 15 January 1964, it was transformed into Export Credit and Guarantee Corporation Ltd. and on 12 December 1983 again renamed as Export Credit Guarantee Corporation of

India Ltd. The primary objective of the Corporation is to promote exports from India by providing export credit insurances and guarantee facilities to Indian exporters and commercial banks.

With the objective of unifying policy direction, control and implementation of the work of exhibitions and commercial publicity, the Trade Fair Authority of India (TFAI) has been set up as a Government company under the Companies Act, 1956. It took over the functions of the erstwhile Directorate of Exhibitions and Commercial Publicity, India International Trade Fair Organisation and Indian Council of Trade Fairs and Exhibitions. The Authority started functioning with effect from 1 March 1977. The TFAI is the nodal agency of the Government for organising India's participation in trade fairs abroad and organising exclusive Indian exhibitions there. It organises India International Trade Fair and other national and international specialised commodity fairs in India, providing assistance to Indian exporters for direct participation in fairs abroad. It also arranges publicity relating to fairs and exhibitions through various media in India and abroad.

AUTONOMOUS BODIES

There are a number of autonomous bodies under the Ministry of Commerce connected with the development of exports and export promotion activities.

There are five statutory commodity boards responsbile for production, development and export of tea, coffee, rubber, spices and tobacco. The Export Inspection Council, Calcutta, a statutory body, is responsible for enforcement of quality control and compulsory pre-shipment inspection of various exportable commodities.

Indian Institute of Foreign Trade, New Delhi, a registered body, is engaged in: (i) training of personnel in modern techniques of international trade; (ii) organisation of research in problems of foreign trade; (iii) organisation of marketing research, area surveys, commodity surveys and market surveys, and (iv) dissemination of information arising from its activities relating to research and market studies.

Indian Institute of Packaging, Bombay, set up in 1966, is also a registered body. The Institute undertakes research on raw materials for the packaging industries, organises training programmes on packaging technologies, and stimulates consciousness on the need for good packing, etc.

There are at present 19 export promotion councils with the Ministry of Commerce. These are registered as non-profit organisations under the Companies Act. The Councils perform both advisory and executive functions. They secure the active cooperation of the growers, producers and exporters in the export efforts. These Councils are also the registering authorities under the import policy for registered exporters.

Agricultural and Processed Food Products Exports Development Authority (APEDA) has come into existence from 13 February 1986. This new Authority will act as the focal point for agrciultural exports and will concentrate on marketing of processed foods in value added form. It will also introduce effective quality control measures.

Federation of Indian Export Organisations, New Delhi is an apex body of various export promotion organisations and institutions. It functions as a primary servicing agency to provide integrated assistance to the Government-recognised export houses and as a central coordinating agency in respect of export promotional efforts in the field of consultancy services in the country.

Indian Council of Arbitration, New Delhi, set up under the Societies Registration Act, promotes arbitration as a means of settling commercial disputes and popularises arbitration among the traders particularly those engaged in international trade.

The primary objective of the Trade Development Authority, set up in July 1970 as a registered society with headquarters at New Delhi, is to induce and organise enterpreneurs largely in the medium and small scale industries, to develop their individual export capabilities. It provides assistance in personalised form to individual exporters from the stage of intention to export through collection and collation of information, product development, market research and analysis. It also advises them on export finance and assists them in securing and implementing export orders.

Marine Products Export Development Authority, Cochin, a statutory body set up in August 1972, is responsible for development of marine products industry with special reference to exports.

Central Advisory Council on Trade, consisting of representatives from different organisations and individuals with business standing and expertise in the field of commerce, advises Government on matters relating to: (i) export and import policy programmes; (ii) operation of import and export trade controls; (iii) organisation and development of commercial services, and (iv) organisation and expansion of export production.

ATTACHED SUBORDINATE OFFICES

Import-Export Trade Control Organisation headed by the Chief Controller of Imports and Exports, is responsible for the execution of export and import policies of the Government. Import and export licensing of iron and steel and ferro-alloys is also looked after by this Organisation. The Chief Controller of Imports and Exports has subordinate offices located at Agartala, Ahmadabad, Amritsar, Bangalore, Bhopal, Calcutta, Chandigarh, Cuttack, Cochin, Guwahati, Hyderabad, Jaipur. Kanpur, Madras, New Delhi, New Kandla, Panaji, Patna, Pondicherry, Rajkot, Shillong, Srinagar and Vishakhapatnam.

Export promotion offices at Bombay, Calcutta, Madras, Cochin, Nagpur and Pune are also functioning under the administrative control of the regional Joint Chief Controller of Imports and Exports or Deputy Chief Controller of Imports and Exports.

Directorate General of Commercial Intelligence and Statistics, Calcutta is the primary agency for compilation and dissemination of statistical information and commercial intelligence. The Directorate brings out a number of publications and periodicals in commerce, statistics and allied fields. It conducts studies on various topics relating to promotion of trade. It also helps in the settlement of commercial disputes.

The offices of the development commissioners at Kandla Free Trade Zone, Gandhidham, Santacruz Export Processing Zone, Bombay, Falta Export Processing Zone, Madras Export Processing Zone, Cochin Export Processing Zone and NOIDA Export Processing Zone are responsible for the administration of their respective zones for cent per cent export-oriented units.

Enemy properties in India are being administered by the Custodian of Enemy Property, Bombay. The Custodian registers Indian claims against properties taken over by Pakistan and disburses ex-gratia grant to Indian nationals/companies whose assets were seized by Pakistan during/after the Indo-Pak conflict of September 1965. The office of the Custodian came into existence in 1939 in the wake of the Second World War and is entrusted with two-fold duties, *viz.*, (i) custody, management and administration of the movable and immovable property in India and (ii) settlement of claims of Indian nationals whose properties were left in Pakistan.

INTERNAL TRADE

The internal trade of India is many times larger than it external trade, owing to the vastness of the country, its varied climate and diverse natural resources. It can be classified under five broad heads: (i) rail-borne trade, (ii) river-borne trade, (iii) coastal trade, (iv) trade borne on other craft, and (v) trade by air.

RAIL-AND-RIVER-BORNE TRADE

Statistics of rail-and-river-borne trade are based on the invoices of railway and steamer companies. Since April 1965, these are being recorded on 'exports basis'. For the purpose of these statistics, India is divided into a number of trade blocks, roughly representing the states of the Indian Union. The chief port towns of Bombay, Calcutta, Cochin and Madras are constituted as separate trade blocks. The less important ports are grouped as other ports, each of which is treated as separate trade block. The number of trade blocks since April 1977 is 38.

The data recorded in respect of 78 selected principal commodities relates only to quantity as value figures are not available on railway and inland steamer invoices. The quantitites are expressed in gross weight instead of net weight with effect from 1978-79. In case of river service, the trade carried by only one steamer company among three trade blocks was recorded from April 1960 to August 1965. The company suspended its river service from September 1965. Since then a new steamer service has been introduced and river-borne trade carried by

Inland Water Transport Corporation Ltd., Calcutta between two trade blocks, *viz.*, Assam and Calcutta, is being recorded.

COASTAL TRADE

Coastal trade is recorded under two broad heads—(i) internal trade, *i.e.*, trade amongst the ports within the same maritime block and (ii) external trade, *i.e.*, trade between one maritime block on the one hand and all other maritime blocks on the other.

22 Transport

THE existing transport system of the country comprises several modes of transport including rail, road, coastal shipping, air transport, etc. Transport has recorded a substantial growth during the last 35 years both in the spread of the network and in the output of the system. Railways have recorded a growth rate of 4.3 per cent per annum in freight traffic and 3.7 per cent per annum in passenger traffic. The traffic at major ports has increased at the rate of 5.2 per cent per annum. Domestic air passengers traffic has recorded a growth rate of 10.5 per cent per annum. Road transport fleet has increased by 6.8 per cent per annum in respect of trucks and 5.4 per cent in respect of buses. The road network has expanded at an annual rate of 4.5 per cent. Shipping tonnage has increased at the rate of 11 per cent and coastal shipping at 1.4 per cent per annum.

In the Seventh Plan, the crucial task of increasing the capacity of the transportation system in step with the economic development of the country, is to be achieved through technological upgradation, optimisation of capacity at the operational level, stepped-up investment and shift in priorities. The increase in capacity is to be attained through replacement and rehabilitation of assets along with maintenance rather than additions to the rolling stock, fleet of buses/aircraft, ships, etc.

RAILWAYS

Indian Railways are the main artery of the nation's inland transport. With the charismatic growth from 34 km in April 1853 to a nation-wide network of 61,850 km, it has now grown into Asia's largest and world's second largest railway system under a single management. For the last 136 years, Indian Railways have played a vital role in the nation's industrial development and national integration. At present, it runs 12,670 trains every day connecting 7,105 stations. The Indian Railways operate on three guages *viz.*, the broad guage (1.675 metres), the metre guage (1 mtr) and the narrow guage (0.762 and 0.610 mtr). The operational fleet consists of 9,498 locomotives, 37,997 coaching vehicles and 3,54,018 wagons. About 11.77 per cent of the route kilometres, 17.87 per cent of the running track kilometres and 16.77 per cent of the total track kilometres are electrified.

Indian Railways have added rolling stock and sophisticated equipment to its fleet year after year. As on 31 March 1987 the motive power fleet of the Indian Railways comprised 4,950 steam, 3,181 diesel and 1,366 electric locomotives. New technology was inducted in the past in the form of diesel and electric traction. Currently, the Railways are in the process of inducting new designs of fuel-efficient locomotives, high-speed coaches and modern high-speed bogies for freight stock. There has been a tremendous growth in modernised S&T system over the Indian Railways. Modern signalling installations, *e.g.*, panel interlocking, route relay interlocking, centralised traffic control, automatic signalling and mechanisation of marshalling yards, and multi-aspect colour light singalling, are being progressively provided to increase throughput. At the end of 1986-87, a multi-channel microwave link was in operation for 15,188 kms.

Indian Railways have made impressive progress in indigenous production of rolling stock and other items of stores over the years and are now not only self-sufficient in most of the items, but have also developed a potential for export. In early '50s, Indian Railways were importing about 23 per cent of their equipment and stores and this figure had been brought down to 10.3 per cent in 1986-87. The progress of railway traffic and inputs for selected years are shown in table 22.1.

ADMINISTRATION

The responsibility for the administration and management of Railways vests in the Railway Board under the overall supervision of a Minister of State for Railways assisted by the Deputy Minister for Railways. The Board consists of a Chairman, who is ex-officio Principal Secretary to the Government of India in the Ministry of Railways, a Financial Commissioner and five other members, who are all ex-officio Secretaries to the Government of Indian in the Ministry of Railways.

RAILWAY ZONES

Railways are divided into nine zones, each headed by a General Manager, who is responsible to the Railway Board for operation, maintenance and financial matters.

The nine zones, with their headquarters and the route kilometres in brackets, are: Central (Bombay VT: 6,486), Eastern (Calcutta: 4,281), Northern (New Delhi: 10,977), North-Eastern (Gorakhpur: 5,163), North-East Frontier (Maligaon-Guwahati: 3,763), Southern (Madras: 6,711), South-Central (Secunderabad: 7,134), South-Eastern (Calcutta: 7,085) and Western (Bombay-Churchgate: 10,211).

Cooperation between the public and the Railway administration is secured through various committees including the National Railway Users' Consultative Committee, Zonal Railway Users' Consultative Committees and Divisional Railway Users' Consultative Committees.

RAILWAY FINANCE

Since 1924-25, Railway finances remain separated from general revenues. They have their own funds and accounts and the Railway budget is presented separately to Parliament. However, the Railways contribute to the general revenue a dividend on the capital invested. The quantum of contribution is reviewed periodically by a Parliamentary Convention Committee. The rates of dividend payable for the period 1980-85 were six per cent on capital invested on Railways up to 31 March 1980 (inclusive of 1.5 per cent on capital as on 31 March 1964 for payment to the states in lieu of passenger fare tax etc.) and 6.5 per cent

TABLE 22.1 PROGRESS OF RAILWAY TRAFFIC AND INPUTS

Year	Route length (kilometre)		Running track (km)	Passengers originating (lakh)	Goods originating (lakh tonnes)	Number of locomotives			Number of coaches	Number of wagons
	Electrified	Non-Electrified				Steam	Diesel	Electric vehicles[1]		
1950-51	388	53,208	59,315	12,840	930	8,120	17	72	19,628	2,05,596
1960-61	748	55,499	63,602	15,940	1,562	10,312	181	131	28,439	3,07,907
1970-71	3,706	56,084	71,669	24,311	1,965	9,387	1,169	602	35,145	3,83,990
1980-81	5,345	55,895	75,860	36,125	2,200	7,469	2,403	1,036	38,327	4,00,946
1981-82	5,473	55,757	75,964	37,044	2,458	7,245	2.520	1,104	37,960	3,92,062
1982-83	5,815	55,570	76,197	36,554	2,560	6,292	2,638	1,157	37,539	3,83,429
1983-84	5,971	55,489	76,407	33,252	2,580	6,217	2,800	1,194	37.931	3.74.757
1984-85	6,325	55,525	76,963	33.332	2.648	5,970	2,905	1,252	38.571	3,65,392
1985-86	6,517	55,319	77,153	34.335	2.864	5,571	3,046	1,302	38.277	3,59,617
1986-87	7,275	54,538	77,254	35,801	3,073	4.950	3,182	1,366	37,997	3,54,018

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1. Includes Electric Multiple Units (EMU)

on capital invested from 1 April 1980, and they were to continue for the years 1985-86 to 1987-88 as an interim measure.

During the successive Five Year Plans, the share of Railways' internal resources in financing the Plan has been increasing. In 1986-87, it was decided to secure funds through public borrowings to augment Railway plan finances. For this purpose, a public sector undertaking known as Indian Railways Finance Corporation with an authorised capital of Rs 200 crore, has been set up. Against its first bond issue floated in March 1987, the Corporation has raised an amount of Rs 559.4 crore. These funds form part of the approved plan outlay and will finance items of planned expenditure.

MANUFACTURE OF ROLLING STOCK

Railway locomotives are built in two departmentally-run production units, *viz.*, Chittaranjan Locomotive Works (CLW), Chittaranjan (West Bengal) and Diesel Locomotive Works (DLW), Varanasi, both administered by the Ministry of Railways.

CLW which originally manufactured steam locomotives had, side by side, switched over to the manufacture of main line electric locomotives in 1961-62 and diesel hydraulic shunting locomotives in 1967-68. Production of steam locomotives was totally stopped in 1971. The overall production of electric and diesel locomotives till March 1987 totalled 1,153 electric locos, 536 diesel hydraulic shunters, 79 narrow guage diesel hydraulic locos and nine metre guage diesel hydraulic locomotives.

Diesel electric main line locos as also heavy duty shunters are built by DLW, Varanasi. Since the commencement of production by the Diesel Locomotive Works, no diesel-electric locos have been imported. Up to March 1987, this unit had delivered 1,548 broad gauge (1,546 WDM-2 and two WDM-6) and 414 metre guage (YDM-4) diesel electric locos, besides 268 broad guage high capacity diesel shunters (WDS-6) and 5 0-B-0 shunters.

Bulk of the passenger service vehicles are manufactured in the Integral Coach Factory (ICF), Perambur near Madras. The capacity of manufacturing coaches in ICF is now being increased to 1,000 per year. ICF is regarded to be one of the largest railway coach building factories in the world. Till March 1987, it has turned out 17,489 passenger service vehicles (fully furnished coaches). In addition to the ICF, there are two units in public sector *viz.*, M/s Jessops, Calcutta and Bharat Earth Movers Ltd. (BEML), Bangalore, which also manufacture coaches.

A new production unit *viz.*, Diesel Component Works (DCW) has been set up by the Railways at Patiala for the manufacture of components for diesel locos and important sub-assemblies. Manufacturing activities have commenced in this unit and after the completion of the project, important components and sub-assemblies for diesel locos would become available indigenously instead of relying on imports.

A new rail coach factory was inaugurated at Kapurthala on 31 March 1988.

The first coach rolled out on the same day. The target of the factory is to produce 150 coaches during 1988-89 with a production capacity of 1,000 coaches per annum.

With a view to reducing dependence on imports for meeting Railways' requirement of wheels and axles, a Wheel and Axle Plant has been set up at Bangalore. The plant was commissioned in September 1984. As against the rated capacity of 23,000 wheelsets, the plant produced 23,153 wheelsets during 1986-87.

The entire requirement of wagons for the Railways is met by units in the public and the private sector supplemented by the Railway workshops. In 1986-87, production of wagons totalled 16,045 in terms of four wheelers. Of these, 15,337 four wheelers were manufactured by the industry and the rest 708 by the Railway workshops.

FREIGHT TRAFFIC

The total originating freight traffic handled by Railways in 1987-88 was 3,184 lakh tonnes (including 282 lakh tonnes of non-revenue earning traffic) as against 3,073 lakh tonnes (including 295 lakh tonnes of non-revenue earning traffic) in 1986-87. The growth of revenue earning freight traffic achieved during the year at 4.5 per cent was lower than the achievement of 9.4 per cent in 1985-86 and 7.4 per cent in 1986-87. Because of the lower growth in freight traffic, growth in transport output measured in terms of net tonne kilometres (NTKMs) of revenue earning freight traffic also decelerated in 1987-88. The revenue earning NTKMs in 1987-88 was Rs 22,250 crore, which was only 3.9 per cent more than that of the previous year's Rs 21,410 crore. However, the total freight traffic handled by the Railways in 1987-88 exceeded the target of 3,160 lakh tonnes—2,900 lakh tonnes of revenue earning and 260 lakh tonnes of non-revenue earning. The achievement in revenue earning NTKMs also was more than the targetted Rs 21,400 crore. The performance of the Railway sector in the year 1985-86 to December 1988 is given in the table 22.2.

PASSENGER TRAFFIC

Passenger traffic originating on Indian Railways recorded an impressive growth of 5.5 per cent in 1987-88—37,920 lakh as against 35,940 lakh in 1986-87. Growth in passenger traffic was 3.0 per cent in 1985-86 and 4.7 per cent in 1986-87. Bulk of this increase was in the short distance suburban system. Growth of passenger traffic on suburban railways was 9.4 per cent in 1987-88, which was more than double the growth of 4.6 per cent recorded in 1986-87. Because of this suburban orientation of the growth in passenger traffic, passenger kilometres increased only by 4.5 per cent in 1987-88. An annual growth rate of three per cent in railway passenger traffic has been anticipated in the Seventh Five Year Plan, but the actual average growth in the first three years of the Plan was 4.7 per cent per annum.

TABLE 22.2 PERFORMANCE OF RAILWAY SECTOR

Sl. No.	Item	1985-86	1986-87	1987-88[1]	April-December[1] 1987-88	April-December[1] 1988-89
1.	Total revenue earning freight traffic (lakh tonnes)	2,585.5	2,777.5	2,902.1	2,101.3	2,180.7
	(i) Coal	101.64	109.45	119.84	87.03	93.60
	(ii) Raw materials for steel plants (excl. coal)	22.99	24.04	24.86	18.02	18.81
	(iii) Pig iron and finished steel from steel plants	8.85	9.48	9.87	6.91	7.38
	(iv) Iron ore for exports	12.54	14.17	13.04	9.81	9.66
	(v) Cement	17.96	19.79	22.32	16.02	18.45
	(vi) Foodgrains	24.10	29.00	30.13	21.87	18.39
	(vii) Fertilisers	13.62	14.53	13.18	9.62	11.83
	(viii) POL	18.63	19.85	21.69	16.04	16.44
	(ix) Balance "other goods"	38.22	37.43	35.28	24.81	23.51
2.	Net tonne kilometres (crore)	19,660	21,410	22,250	16,120	16,200
3.	Net tonne kilometres per wagon per day (BG)	1,296	1,420	1,449	1,393	1,411
4.	Passenger traffic originating (crore)	343.3	359.4	379.2	283.7	260.8
5.	Passenger kilometres (crore)	24,060	25,650	26,940	20,260	19,030

1. Provisional

Source: Economic Survey 1988-89

RESEARCH

Research Designs and Standards Organisation (RDSO) functions as technical adviser and consultant to the Indian Railways. This organisation came into existence in 1957 by the merger of two organisations, namely, Central Standards Organisation (set up in 1930) and Railways Testing and Research Centre (set up in 1952). Presently, the various aspects with which the organisation is engaged are research, designs, indigenous development, specifications and standardisation, inspection, service engineering and consultancy. The research activities of the RDSO are guided by a Central Board of Railway Research (CBRR) which includes eminent scientists, engineers, technologists, educationists and managers. Its principal aim is to promote progressively standardisation of rolling stock, track, bridges and structures and all equipment used by Railways. The other important function of this organisation is to undertake research pertaining to all spheres of railway working. Over the years, the RDSO has helped the Railways in indigeneration in all fields of railway operations and has also made it possible for them to export a number of items of railway equipment.

STAFF WELFARE

Indian Railways have a work force of over 16.12 lakh regular employees and nearly two lakh casual labour. The welfare schemes of the Railways cover a wide spectrum of activities, like medical, education, housing, recreation, etc. Railways have provided 6.06 lakh residential units, 107 hospitals and 645 health units including lock-up dispensaries, 684 educational institutions comprising one degree college, seven intermediate colleges, 85 higher secondary schools, 29 middle schools and 562 primary schools as well as holiday homes at hill stations spread all over India, to their staff. Other salient activities for the welfare of the staff of the Railways are operation of Staff Benefit Fund, handicraft centres, subsidised hostels, distress relief, passes for widows, technical scholarships and so on.

TRAINING OF STAFF

There are five centralised training institutions, *viz.,* (i) Indian Railways Institute of Civil Engineering, Pune, conducts specialised courses on regular basis, bridge technology and works for officers of Civil Engineering Department; (ii) Indian Railways Institute of Signal Engineering and Telecommunication, Secunderabad, caters to the specialised technical training in Signal Engineering, Telecommunications and Electronics; (iii) Indian Railways Institute of Mechanical and Electrical Engineering, Jamalpur, conducts special courses in diesel technology and workshop technology etc., for officers and senior supervisors of Mechanical Engineering Department; (iv) Railway Staff College, Vadodara, conducts courses in inter-disciplinary subjects for officers, and (v) Indian Railways Institute of Electrical Engineering, Nasik, recently set up, will run courses in electrical engineering.

METRO RAILWAY

About 10 km length out of the total route length of 16.43 km of the Calcutta Metro has come under operation in two stretches—Esplanade-Tollyganj (8 km) and Dum Dum-Belgachia (2 km). The whole line from Dum Dum to Tollyganj is scheduled to be completed by December 1990.

CONSULTANCY SERVICES

There are two organisations in public sector engaged in providing high-level consultancy services in all the fields of railway technology and other modes of transport in India and abroad. These are, *viz.,*(i) Rail India Technical and Economic Services (RITES) which is one of the leading full transportation consultants in India and abroad, and (ii) Indian Railway Construction Company which is engaged in the construction of railway projects on turn-key basis including electrical, signalling and telecommunication systems both in India and abroad. Another undertaking *viz.,* Indian Railway Finance Corporation (IRFC) has been set up for the purpose of raising funds through public borrowings by issue of bonds for augmenting Railway plan finances.

ROAD TRANSPORT

Road transport plays an important role in the economy of the country and is particularly suitable for short and medium distances. It also offers a number of other advantages such as flexibility, reliability, speed and door-to-door service. Other transport modes too function more effectively when linked to road. Road transport thus forms an indispensable element of the national transportation system. The share of road transport in overall traffic has been continuously increasing and there has been a substantial shift from rail to road over the years. Constraints in capacity on the railways combined with the inherent advantages of road transport and expansion of the road network has contributed to the shift. The motor vehicle population in the country has been continuously increasing. From just 34,000 in 1950-51, the number of buses has gone up to 2,06,000 in 1984-85, thereby registering an annual growth of 5.4 per cent on average. In the corresponding period, the number of trucks increased from 82,000 to 7,63,000 or say, at an annual rate of 6.8 per cent. The Seventh Plan envisages an annual growth of eight per cent of both the truck and the bus fleets.

State participation in road transport commenced in 1950. It was introduced to provide efficient and adequate passenger services as well as goods transport to meet, particularly, the needs of hilly and underdeveloped areas. Most of the states/union territories have nationalised passenger transport in varying degrees. In the country as a whole, 40 per cent buses are being run by the public sector undertakings. Fifty seven state road transport undertakings comprising a fleet strength of 94,833 vehicles are catering to the needs of 5.12 crore passengers every day. Statutory corporations have been set up under the Road Transport Corporation Act, 1950 in several states. In other states, the nationalised services are operated by department or municipal corporations or registered companies in most of the cities, but services are State owned. For smooth movement of goods, the restriction on the number of vehicles for which National permit could be issued by state governments/union territory administrations has been removed by an amendment to the Motor Vehicles Act, 1939 and has been brought into effect through an ordinance on 28 January 1986.

The private sector runs almost the entire truck industry and operates about 60 per cent of passenger services. Till 1984-85, about 62 per cent of buses were being run by this sector. In the non-mechanised sector, there are nearly 150 lakh bullock-carts in the country carrying an estimated 90 crore tonnes of originating traffic with a lead of 10 km.

ROADS

The Indian road network is one of the largest in the world. The total road length

in India was 16,20,504 km in 1983-84. The road development programme envisaged under the Seventh Plan laid emphasis on a coordinated and balanced development of road network in the country under (i) primary roads comprising national highways; (ii) secondary and feeder road system covering state highways and major district roads, and (iii) rural roads including village roads and other district roads. Substantial outlays were proposed for road development in the rural and the tribal areas.

In the first three Five Year Plans and the three Annual Plans, a sum of Rs 1,121.58 crore was spent on road development. During the Fourth, Fifth, two Annual Plans and the Sixth Plan, a sum of Rs 8,160.09 crore was spent on this. The outlay for road development under the Seventh Plan for Central sector was Rs 1,019.75 crore, for state sector Rs 3,666.98 crore and for union territories Rs 513.31 crore.

NATIONAL HIGHWAYS

The Government is directly responsible for the national highway system. In 1947, approximately 2,500 km of missing road links and thousands of culverts and bridges, which did not exist, were required to be constructed to have an integrated and continuous network. There was an increase in the missing road links owing to the addition of new roads to the national highway system in later years. Up to 31 March 1988 road links including diversions constructed totalled 4,593 km, improvement of low grade section completed in 22,995 km, widening and strengthening single lane section to double lane carriageway done in 24,525 km and 452 major bridges constructed. The present national highway system includes a total road length 33,612 km An outlay of Rs 891.75 crore has been provided in the Seventh Plan for the development of national highways. Though the national highways constitute only two per cent of the total road length, they carry nearly one-third of the road traffic.

STATE SECTOR ROADS

State highways and district and rural roads are the responsibility of the state governments and are maintained by various agencies in the states and union territories. Roads are being developed in rural areas under the Minimum Needs Programme, the objective being to link all villages with a population of 1,500 and above and 50 per cent of the villages with a population of 1,000—1,500 with all-weather roads by 1990. The Government also assists in the development of certain selected roads in the states.

BORDER ROADS

Border Roads Development Board was set up in March 1960, for accelerating economic development and strengthening defence preparedness through rapid and coordinated improvement of road communication in the north and north-eastern border areas. The development activities now encompass Rajasthan, Jammu and Kashmir, Himachal Pradesh, Uttar Pradesh, Madhya Pradesh, Sikkim, Assam, Meghalaya, Nagaland, Tripura, Manipur, Mizoram, Arunachal Pradesh, Bihar, the Andaman and Nicobar Islands and also Bhutan.

Border Roads Organisation (BRO) executes its work departmentally. It is a self-sufficient force, mechanised and mobile and during national emergencies provides engineering support to the Army. Besides construction of roads, the BRO had also undertaken construction of airfields, buildings and other operational works for the Defence Services. As on 31 March 1988, the organisation had constructed about 20,449 km of roads and is maintaining about 18,000 km of roads in various regions of their operation.

RURAL ROADS

Rural roads are constructed under the Minimum Needs Programme (MNP); Rural Landless Employment Guarantee Programme (RLEGP); National Rural Employment Programme (NREP), and Command Area Development (CAD). Recently, the Government has set up a committee to examine different aspects of integrating various rural road programmes. The MNP envisages linking of all villages with a population of 1,500 and above and 50 per cent of the villages with a population between 1,000 to 1,500 by the end of Seventh Plan.

LENGTH OF ROADS

The total length of roads in India was 16,20,504 km (both surfaced and unsurfaced roads) in 1983-84. State wise break-up of length of roads is given in table 22.3.

SOLATIUM FUND AUTHORITY

Consequent to the amendment of the Motor Vehicles Act, 1939 in 1982, the Government has established a Solatium Fund for giving solatium (compensation) to the victims of hit-and-run motor vehicle accidents i.e., the accidents arising out of the use of motor vehicles the identity whereof cannot be ascertained in spite of reasonable efforts made. The solatium payable is Rs 5,000 in the case of death and Rs 1,000 in the case of grievous hurt. The Solatium Fund authority administers the Solatium Fund which has been established with an initial amount of one crore rupees. This is augmented every year by contributions from GIC plus insurance companies, the Central government and the state government in the ratio of 70 per cent and 15 per cent each respectively.

Solatium Fund scheme is being implemented through state governments. The legal heir of the deceased/victims of grievous hurt have to submit claim to the *tahsildar*/sub-divisional officer, who has a claim enquiry officer to quickly process the matter on the basis of first information report and a medical report and also recommend to the district magistrate for the grant of solatium.

TABLE 22.3 ROAD LENGTH IN INDIA

(Kms)

	Surfaced Roads	Unsurfaced Roads	Total
ALL INDIA	7,47,003	8,73,501	16,20,504
STATES			
1. Andhra Pradesh	63,715	68,337	1,32,052
2. Arunachal Pradesh	2,050	10,728	12,778
3. Assam	8,138	52,569	60,132
4. Bihar	28,660	54,975	83,635
5. Goa[1]	3,220	2,521	5,741
6. Gujarat	52,370	13,968	66,338
7. Haryana	21,659	3,358	25,017
8. Himachal Pradesh	4,948	16,331	21,279
9. Jammu and Kashmir	7,434	5,378	12,812
10. Karnataka	69,879	45,308	1,15,187
11. Kerala	24,162	88,880	1,13,042
12. Madhya Pradesh	60,874	55,339	1,16,213
13. Maharashtra	97,601	86,533	1,84,134
14. Manipur	2,315	3,633	5,948
15. Meghalaya	1,806	3,630	5,436
16. Mizoram	1,171	1,494	2,665
17. Nagaland	1,285	5,830	7,115
18. Orissa	17,506	1,04,740	1,22,246
19. Punjab	37,103	10,707	47,810
20. Rajasthan	43,993	39,476	83,469
21. Sikkim	1,229	62	1,291
22. Tamil Nadu	81,742	62,021	1,43,763
23. Tripura	1,302	8,770	10,072
24. Uttar Pradesh	74,290	98,547	1,63,837
25. West Bengal	25,917	31,622	57,539
UNION TERRITORIES			
1. Andaman and Nicobar Islands	612	49	661
2. Chandigarh	1,234	--	1,234
3. Dadra and Nagar Haveli	241	37	278
4. Delhi	9,167	7,119	16,286
5. Daman and Diu[1]	3,220	2,521	5,741
6. Lakshadweep			
7. Pondicherry	1,380	1,114	2,494

1. Separate figures for the State of Goa and the Union Territory of Daman and Diu are not available.
Note: The data given above is as on 31 March 1984

SHIPPING

Overseas shipping has an extremely important role to play in India's international trade. The country has the largest merchant shipping fleet among the developing countries and ranks 16th in the world in shipping tonnage. Indian shipping accounts at present for only one per cent of the total world fleet. Beginning from a modest cargo of 1.92 lakh gross registered tonnage (GRT) at the time of independence, the country has since then acquired a diversified fleet of 55.91 lakh GRT.

SHIPPING BODIES

National Shipping Board is a statutory body set up under the Merchant Shipping Act, 1958, to advise the Government on shipping matters. Ship Acquisition Licensing Committee deals with ship acquisition proposals received from shipping companies. The inter-ministerial high level Committee looks into problems of shipping industries. The All India Ship Council is concerned with negotiation on freight and shipping problems with shipping companies and suggestions made at shipping conferences. The Indian National Shipowners Association seeks to promote the interest of national shipping and other allied industries.

SHIPPING COMPANIES

There are 53 shipping companies in the country, of which 23 are engaged exclusively in the coastal trade, 21 in overseas trade and the remaining nine in both coastal and overseas trade. The Shipping Corporation of India Ltd. (SCI), a public sector undertaking, is engaged in both coastal and overseas trade of the country.

SCI, which is the biggest shipping line of the country, had a Merchant fleet of 125 vessels of 28.76 lakh GRT in June 1988 and operated on almost all the maritime routes. The tonnage of SCI accounts for about 53 per cent of the total Indian tonnage.

The major private sector shipping companies which own one lakh or more GRT are: Great Eastern Shipping Co. Ltd. (5.60 lakh GRT), Chowgule Steamships Ltd. (2.20 lakh GRT), South India Shipping Corporation Ltd. (1.98 lakh GRT), India Steamship Company Ltd. (1.65 lakh GRT) and Essar Shipping Ltd. (1.64 lakh GRT).

COASTAL SHIPPING

Coastal shipping is the most efficient and comparatively cheaper mode of transport for carriage of bulk traffic over long hauls particularly when the origin and destination of a traffic stream is located along the coast. India has a long coast line of 7,516.6 km. Coastal shipping plays an important role in the integrated transport network of the country, particularly when inland modes are strained. During the Sixth Plan, the target was to increase the coastal tonnage from 2.54 lakh GRT in 1979-80 to five lakh GRT in 1984-85. The actual addition, however, was only one lakh GRT, thus taking the total coastal fleet to about 3.5 lakh GRT by the end of the Plan period. The coastal fleet is ageing fast; about 35 per cent of the tonnage is already overdue for replacement, while another 17 per cent will be added to this category in the Seventh Plan.

Coastal shipping faces several constraints. The overaged vessels are fuel-inefficient and involve high maintenance and operating costs. This has led to increase in bunker costs, operating expenses, higher stevedoring charges and uneconomic freight structure which do not compare well with either rail or road. Furthermore, coastal shipping carries low-rated bulk commodities like coal, cement and salt for which railway freight rates are lower, with consequent consumer preference for rail transport.

Inordinate delays at ports too have affected competitive advantage of coastal shipping. It is estimated that ships spend seventy per cent of their time at ports. Apart from cumbersome port and customs procedure, other restrictions like inadequate draft have precluded optimal utilisation of shipping capacity. There are also directional imbalances in coastal traffic movement. Thus, empty movement (sailings in ballast) is very often undertaken by coastal vessels following unloading of coal at west coast ports.

During the Seventh Plan, efforts are being made to relieve the constraints effecting coastal shipping operations, to the maximum extent possible. Overaged vessels would be replaced with modern fuel-efficient vessels. Port procedures would be streamlined to provide priority berthing. Customs clearance procedures now in vogue are cumbersome and time-consuming and need to be simplified. 'Kucebsubg systems' of coastal vessels would permit sufficient freedom of operation to enable switchover to overseas trade. The procedure for revision of freight rates would be simplified, so that uneconomic rates do not impinge on the viability of this sector. It is estimated that about 70 lakh tonnes of cargo will move by coastal shipping by the end of the Seventh Plan.

INDIAN REGISTER OF SHIPPING

India's National Ship Classification Society was formed in March 1975 under the Companies Act, 1956. Its main objectives are: (i) to provide a faithful and accurate classification and record of mercantile shipping classed with IRS; (ii) to establish and administer standards for the construction and periodical survey of ships and other marine structures; (iii) to approve design of, to survey and to issue reports on land-based installations, machinery, materials, and apparatus of all kinds, and (iv) to aid and develop marine technology in India through research and development work.

IRS has its head office in Bombay and out-port offices at Bombay, Calcutta, Vishakhapatnam, Madras, Cochin, Goa, Rourkela and Tiruchirapally. The General Insurance Corporation of India and Tariff Advisory Committee accept all coastal and port craft up to a value of Rs 10 crore for single classification of IRS. The Government of India has authorised the IRS to assign International Load Lines and carry out Cargo Ship Safety Construction Surveys of Indian-flag ships. By the middle of 1988, 149 ships have been assigned these Load Lines.

In order to maintain acceptable standards and to provide world-wide coverage for its services, the IRS has entered into agreements of mutual cooperation with all major international classification societies by virtue of which ships can also be classed dually with IRS as well as the corresponding society with arrangements for survey all over the world. These agreements also enable IRS to get the technical back-up whenever required for its varied services from different sources.

By the end of August 1988, the Society had 575 ships totalling 43.97 lakh GRT in its class and 285 ships of various types under construction in India and abroad under IRS class. The IRS is also actively involved in inspection and certification of machinery, equipment and components at manufacturers' works. The IRS also provides specification services on behalf of owners who cannot generally spare their expert personnel for day-to-day supervision of new construction at the shipyards. It has so far provided such services for about 100 vessels both in India and abroad. In the non-marine industrial sector, the IRS also provides third party independent inspection services. Many large organisations like Oil and Natural Gas Commission, Indian Oil Corporation Ltd., Bharat Heavy Electricals Ltd., etc., have availed of such services for a variety of equipment including electric level—luffing cranes, flame-proof equipment, special pipes to API standards, high voltage and high-power equipment, and fire-fighting equipment, etc.

SHIP BUILDING

There are four major and three medium-size shipyards in India. All these shipyards are in the public sector. Apart from the above, there are about 33 small shipyards in the private sector which cater to the domestic requirements for small craft. The maximum size of vessels that could be in Cochin Shipyard, Cochin and Hindustan Shipyard, Vishakhapatnam are 86,000 DWT and 45,000 DWT respectively.

There are at present 15 major repair dry docks—five at Bombay, six at Calcutta, two at Vishakhapatnam and two at Cochin. Although most of these dry docks can accommodate ships of less than 10,000 DWT only, one dock at Bombay can take up to 20,000 DWT, one at Hindustan Shipyard at Vishakhapatnam can take bulk-carriers up to 70,000 DWT and another at Cochin up to one lakh DWT.

HINDUSTAN SHIPYARD

The shipyard at Vishakhapatnam was set up in 1941 in the private sector by the Scindia Steam Navigation Company Ltd. Because of difficulties faced by the owners, the Government was requested to take over the shipyard and, accordingly, a new company *viz.*, Hindustan Shipyard Limited was incorporated in 1952. In 1962, the shipyard became a cent per cent public sector enterprise. Thereafter, in 1971, ship repair facilities were added besides various development programmes for augmenting the installed capacity of the yard.

With the completion of the stage-II modernisation and expansion programme, the capacity of the yard is to go up to the equivalent of 6.5 pioneer class vessels by 1989-90. The shipyard has produced and delivered 98 vessels of different sizes and specifications *viz.*, dumb barges, bulk carriers, product carriers, passenger-cum-cargo vessels and high technology drilling besides offshore petrol supply-cum-support vessels in addition to offshore well-head-platforms.

COCHIN SHIPYARD

The Cochin Shipyard, set up with the Japanese collaboration, is designed to have a dock for building ships up to 85,000 DWT and a repair dock to accommodate ships up to 1,00,000 DWT. The Cochin Shipyard has so far built and delivered four bulk carriers of 75,000 DWT each. The fifth ship of the same size is ready for delivery. The shipyard has now started construction of oil tankers of 86,000 DWT.

NAVIGATIONAL AIDS

The Government looks after the general navigational aids while the states, port trusts and other agencies are responsible for the local aids. However, under the Lighthouse Act, 1927, the Government exercises general control over all aids through the Department of Lighthouses and Lightships, which in turn, maintains various navigational aids along the coast of India besides launches and HF/VHF Radio Telephone sets. There are among others 155 lighthouses, 12 lightbuoys, six fog signals, 14 radio beacons, 12 decca chains, one light vessel, 11 racons and 32 HF/VHF/RT sets. In the Seventh Plan, Rs 33.07 crore has been provided for the development schemes.

TRAINING INSTITUTIONS

There are three training establishments for merchant navy officers. *T.S. Rajendra* at Bombay imparts pre-sea training to navigation cadets. The Lal Bahadur Shastri Nautical and Engineering College, Bombay conducts post-sea instrumental courses in navigation and engineering. The Directorate of Marine Engineering Training at Bombay and Calcutta imparts training to marine engineering cadets.

ADVISORY SERVICES

A separate ship building and ship repair wing headed by a Development Advisor formulates plans and programmes and makes policy decisions with regard to this sector of industry. A total outlay of Rs 137 crore has been allocated to this sector for the Seventh Plan. Some of the important schemes which are under consideration/implementation are: (1) modernisation of HSL facilities; (2) augmentation of ship repair capacity in HSL; (3) modernisation of dry dock facilities at Calcutta and Bombay ports; (4) establishment of National Ship

Design and Research Centres; (5) creation of an exclusive dredger repairs facility at Calcutta; and (6) scheme for assistance to the entrepreneurs of ship ancillary sector. The small shipyards in India have been geared up for meeting the country's fishing vessel requirements and as many as 55 fishing trawlers are under production in various shipyards.

INLAND WATERWAYS

India has about 5,200 km of major rivers, which are navigable by mechanised craft, but only 1,700 km are actually utilised. As regards canals, the available length is 4,300 km but, only a length of 485 km is suitable for mechanised craft of which only 33½ km are being actually utilised. Important among the navigable rivers are the Ganga, the Brahmaputra and their tributaries, the Godavari, the Krishna and the Mahanadi, the Narmada and the Tapti and their canals, the backwaters and canals of Kerala, the Buckingham Canal in Andhra Pradesh and Tamil Nadu, the Cumberjua canal and the Mandovi and the Zuari rivers in Goa and the network of tidal rivers in Sunderbans.

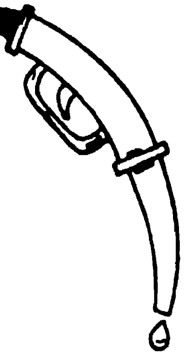
Inland water transport is a state subject. The development schemes are mostly taken up by the states as Centrally-sponsored schemes. In the Seventh Plan, a provision of Rs 225.73 crore has been made for the development of inland water transport *i.e.,* Rs 155 crore is the Central sector and Rs 70.73 crore in the state sector, of which Rs 43.89 crore has been provided for 1988-89 for the Central/Centrally-sponsored schemes.

INLAND WATER TRANSPORT BODIES

Central Inland Water Transport Board (CIWTB) New Delhi, formulates policy for the development of inland water transport in the country. Consequent upon the setting up of the Inland Waterways Authority of India in 1986, an autonomous body under the IWAI Act, 1985, it is responsible for the development, maintenance and management of the national waterways. The IWAI is also implementing the scheme of interest subsidy by the Central government, on loans being obtained by inland water transport enterpreneurs for mechanisation of vessels, purchase of new vessels and mechanised boats from banks/financial institutions.

National Waterways (Allahabad-Haldia stretch of Ganga-Bhagirathi-Hooghly River System) Act, 1982, however, provides that it shall be the responsibility of the Central government to regulate and develop this waterway and to secure the efficient utilisation of the same for shipping and navigation. River services in the Haldia-Farakka-Patna stretch have already been introduced by the CIWTC. Further extension of service, upstream of Patna is possible when round-the-year navigation is established for which a pilot project has already been commissioned.

Central Inland Water Transport Corporation, a Government undertaking set up in 1967 at Calcutta, operates river services carrying goods between



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A clean filter prevents dust from entering the engine Resulting in longer engine life and lower fuel consumption

SEE THAT YOUR ENGINE IS TUNED.
If your engine has low pulling power or emits smoke, have it checked immediately An un-tuned engine only consumes more petrol and adds to air pollution

USE THE RIGHT LUBRICATION.
Use only the right grade of oil recommended for your vehicle And change it strictly as specified by the manufacturer

ENSURE THE RIGHT TYRE PRESSURE.
Right air pressure is crucial Under-inflated tyres can alone waste 5% of your petrol and shorten tyre life by 25%

P C R A

Petroleum Conservation
Research Association
1008, New Delhi House,
27 Barakhamba Road, New Delhi-110001

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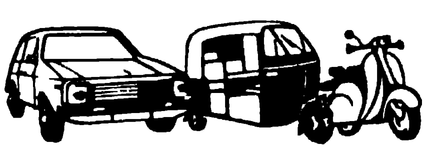

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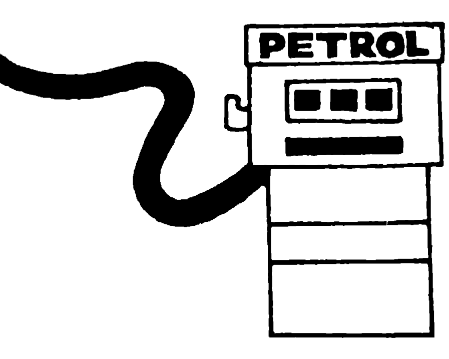

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410 tonne Converter Shell on multi-axled vehicles enroute Calcutta to Aonla ('1800' Kms) over 2 rivers and rough terrain

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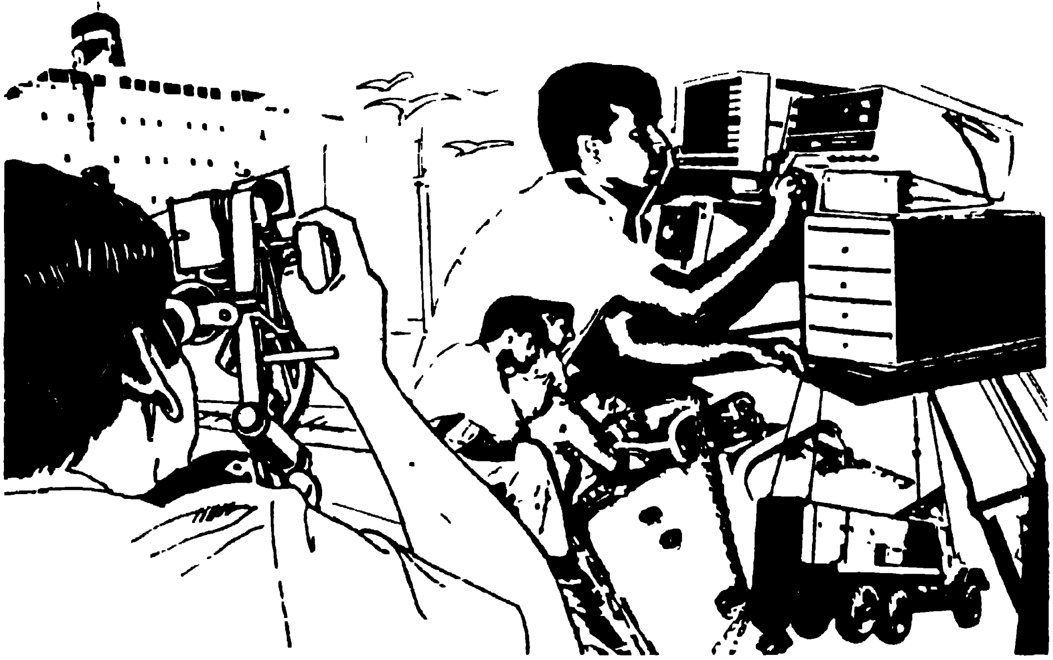

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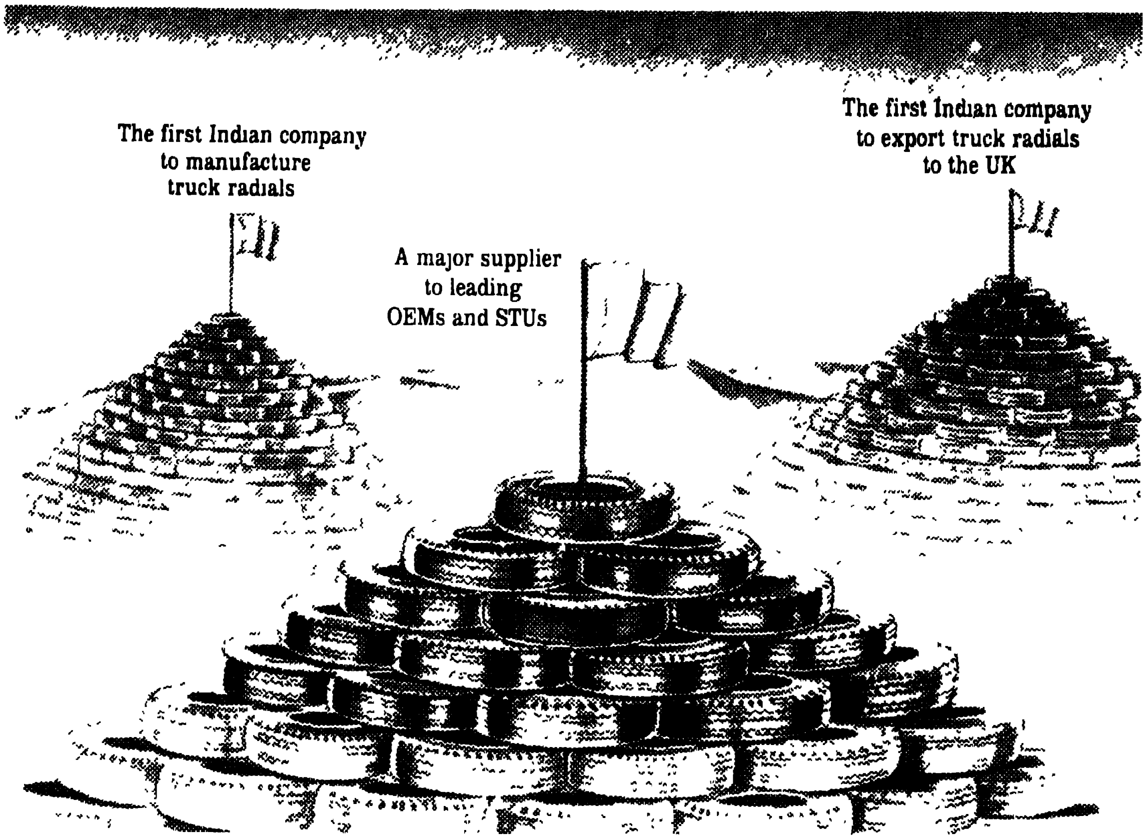

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Calcutta and Assam via Bangladesh. It is also operating river services between Calcutta and Farakka and Calcutta and Cachar. Its other activities include ship building and ship repairing.

PORTS

There are 11 major ports in the country of which Nhava Sheva Port is at the construction stage. In addition, 139 minor working ports (of a total of 226 minor ports) are also along the coastline of about 6,000 km. Major ports are the direct responsibility of the Government, while minor ports including intermediate ports fall in the Concurrent List of the Constitution and are managed and administered by the respective maritime state governments.

MAJOR PORTS

Kandla, Bombay, Marmugao, New Mangalore and Cochin are the major ports on the west coast. A new major port at Nhava Sheva off Bombay, estimated to cost Rs 985 crore, will have three fully mechanised container berths, two mechanised berths for handling dry bulk cargo and one service berth. On the east coast, Tuticorin, Madras, Vishakhapatnam, Paradip and Calcutta-Haldia are the major ports. All the major ports are administered in accordance with the provisions of the Major Port Trusts Act, 1963. Each major port has a Board of Trustees representing various interests connected with port operations and the shipping industry.

Among the major ports, Bombay is the biggest. It is a natural harbour. It handles over one-fifth of the total traffic of the ports, bulk of which consists of petroleum products and dry cargo. Kandla is a tidal port. A free trade zone has been set up here. It handles all types of traffic consisting mainly of crude oil, petroleum products, fertilisers, foodgrains, salt, cotton, cement, sugar, edible oils, scrap etc Marmugao occupies the fifth position in terms of total quantum of traffic handled. Facilities for export of Kudremukh iron ore were specially developed at New Mangalore. The port handles fertilisers, molasses, petroleum products, edible oils, granite stones and all types of other general cargo. Cochin is a natural harbour. The traffic handled at this port comprises fertilisers, raw materials, petroleum products, general cargo etc. Tuticorin handles mainly coal, salt, edible oils, foodgrains, sugar and dry cargo and petroleum products.

Madras is one of the oldest ports on the east coast. It handles the largest volume of traffic in general cargo, next only to Bombay. The traffic handled at this port consists mainly of petroleum products, crude oils, fertilisers, iron ore and dry cargo. Vishakhapatnam is the deepest land-locked and protected port where an outer harbour has been developed for exporting iron ore and a berth has been constructed for crude oil and petroleum products as also a multi-purpose general cargo berth. The other traffic handled at this port consists of oils, fertilisers and dry cargo. Paradip handles iron ore and some quantities of coal and dry cargo. Calcutta is a riverine port handling diversified commodities. A new mechanised dock system at Haldia with provision for deep draft vessels down-stream supplements the facilities available at Calcutta. Haldia has fully-equipped coal handling oil and containerised berths. The traffic handled at this port consists of coal, crude oil, petroleum products, fertilisers and other dry cargo.

Cargo handled at the 11 major ports was to the tune of 1,338 lakh tonnes during 1987-88, and stood at 7.6 per cent higher than 1,244 lakh tonnes handled in 1986-87 and 8.7 per cent above the target of 1,230.8 lakh tonnes. Major increases were recorded in the traffic of petroluem, oil and lubricants (POL), coal, vegetable oils and containerised cargo. The traffic in iron ore fertilisers and raw materials for fertiliser declined marginally as compared to 1986-87. Growth in cargo handling achieved during the year was higher than the growth of 4.1 per cent achieved in 1986-87.

Cargo handled at all the major ports except Marmugao increased in 1987-88 over the previous year. In the case of Marmugao, there was a fall of 10.7 per cent. Achievements of targets across the ports were uneven. Madras port performed well by exceeding the target by 33.3 per cent followed by Bombay 17.3 per cent. Haldia, Vishakhapatnam, New Mangalore and Marmugao failed to achieve the targets. The container traffic in 1987-88 recorded an increase of over 19 per cent. About 53 lakh tonnes of containerised cargo were handled in 1987-88 as compared to 45 lakh tonnes in 1986-87. More than 50 per cent of the container traffic continued to be handled at Bombay port. The total cargo handling capacity at the major ports in 1987-88 was 1,419.3 lakh tonnes.

MINOR AND INTERMEDIATE PORTS

Allocation for the development of minor ports is provided in the respective state sector plans. During the Seventh Plan period, Rs 20 crore has been approved for upgradation of two minor ports—Redi Port in Maharashtra (west coast) and Kakinada port in Andhra Pradesh (east coast). However, development of port facilities in the Andaman and Nicobar Islands, Lakshadweep and Pondicherry are provided for in the Central sector plans.

Dredging Corporation of India was set up in March 1976 to undertake capital and maintenance dredging of the ports in an integrated manner. At present, the Corporation has a fleet of eight dredgers and other ancillary craft. In 1987-88, DCI dredged about 200.37 lakh cu. mts. as against the capacity of 227.04 lakh cu. mts.

CIVIL AVIATION

ORGANISATION

There is a number of agencies which are involved in providing civil aviation services in the country. While Air India, Indian Airlines and Vayudoot provide air services, International Airports Authority of India (IAAI), Directorate General of Civil Avation (DGCA) and National Airports Authority (NAA) provide infrastructural facilities. The Ministry of Civil Aviation is responsible for the formulation of national policies and programmes relating to development and regulations of civil aviation including provision of aerodromes and regulation of air traffic and carriers, passengers and goods by air. The Ministry is also advising on implementing programmes for the orderly growth and expansion of civil air transport.

There are bilateral air service agreements with 57 countries and 42 foreign airlines are operating air services to/through India, in addition to Air India and Indian Airlines. There are 815 aircraft including 112 gliders with current certificate of airworthiness. During 1987, 785 air crew licenses of various categories were issued. The total number of valid air crew licenses at the end of the year 1987 was 6,962. At present, there are 18 flying clubs managed privately and six flying schools/institutions managed by state governments in the country. There are seven gliding clubs and seven gliding wings of the flying schools, besides one government gliding centre at Pune.

INTERNATIONAL AIRLINES

Air India is responsible for international air services. It was established under the Air Corporation Act, 1953, and has its headquarters at Bombay. The Air India inaugurated its first international service to London in June 1948 with the constellation aircraft. Since then, Air India has expanded its route network to cover five continents and operates services to USA, Europe, Africa, West Asia, East Asia and Australia. The Corporation has ten 747-200 aircraft, three Airbus A 300-B4 and six Airbus A 310-300 in its fleet. During 1987-88 and 1988-89 (April-December 1988) it carried about 21.33 and 17.97 lakh passengers respectively.

DOMESTIC

Indian Airlines is responsible for providing air services for passengers, cargo and mail on the internal air network in the country and eight neighbouring countries. It operates to 72 stations including 10 foreign stations. It has in its fleet 11 Airbus, 27 Boeing 737, six HS-748 and four F-27 aircraft. It was set up under the Air Corporation Act, 1953 with its headquarters at Delhi and four regional offices located at Bombay, Calcutta, Delhi and Madras. During the year 1987-88, the total number of passengers carried by the Indian Airlines was 104.40 lakh.

VAYUDOOT

Vayudoot, the third airlines, was set up on 20 January 1981. The main functions of Vayudoot are to plan, promote, develop, organise and operate air transport service—scheduled and non-scheduled—for carriage of passengers, mail and freight and for any other purpose. It is also responsible for connecting inaccessible areas of the country which are not covered by Indian Airlines and those areas which are important centres of trade and commerce and are important from the point of tourism.

PAWAN HANS LIMITED

The Pawan Hans Ltd. was incorporated on 15 October 1985 as a Government company under the provisions of Companies Act, 1956 to provide helicopter-based air transport services to meet the requirement of the petroleum sector, to operate services in inaccessible areas and hilly terrains, to operate tourist charters and to provide intra-city transport service.

The headquarters of the Corporation is located at Delhi, with its two regional offices at Bombay and Delhi. It has acquired 21 Westland WG 30 and 27 Dauphin SA 365N helicopters to augment its operations.

DIRECTORATE GENERAL OF CIVIL AVIATION

The Directorate General of Civil Aviation is the main regulatory organisation responsible for enforcing civil air regulations, air safety and airworthiness. It also coordinates all regulatory functions with the International Civil Organisation. This organisation is responsible for: (i) formulation and implementation of standards of airworthiness applicable to all civil aircraft registered in India; (ii) certification of aircraft operators and licensing of air crew and airports; (iii) investigation into accidents and incidents, and (iv) rendering advice on matters relating to air transportation and processing of aviation legislation.

The Directorate is headed by the Director General of Civil Aviation with its headquarters at New Delhi and field offices in main aviation centres in the country.

INTERNATIONAL AIRPORTS AUTHORITY OF INDIA

International Airports Authority of India was set up on 1 February 1972 with its headquarters at Delhi. It is responsible for providing services and facilities for efficient operation of air transport services at four international airports at Bombay, Delhi, Calcutta and Madras. Over a period of 16 years, the Authority has acquired expertise and has earned a good reputation in the field of airport consultancy and construction both in India and abroad.

NATIONAL AIRPORTS AUTHORITY

National Airports Authority has been formed under the National Airports Authority Act, 1985. It started functioning with effect from 1 June 1986. The main functions and responsibilities of the Authority are: (i) management of civil aerodromes, civil enclaves and aeronautical communication stations; (ii) planning, development, construction and maintenance of runways, associated aircraft movement areas and passenger-handling buildings on domestic civil aerodromes and civil enclaves; (iii) planning, procurement, installation and maintenance of radio navigational aids, communication systems, visual and safety services and security systems and domestic airports, and (iv) provision of air traffic control and radar services for ensuring safety of aircraft operations for the entire Indian air space including establishment of air routes, etc.

The Authority is headed by chairman and consists of members (not more than 14 and not less than 8), with its headquarters at Delhi. The Authority has four regional offices located at Delhi, Bombay, Calcutta and Madras. There are 86 domestic aerodromes including 28 civil enclaves managed by the Authority.

BUREAU OF CIVIL AVIATION SECURITY

Bureau of Civil Aviation Security is responsible to formulate a national civil aviation security programme and to ensure its application to airports from where scheduled flights operate. The Bureau is headed by the Commissioner of Security, Civil Aviation, with its headquarters at New Delhi. It has four regional offices at Delhi, Bombay, Calcutta and Madras.

HOTEL CORPORATION OF INDIA

Hotel Corporation of India is wholly owned by Air India. It was incorporated on 8 July 1971. This Company operates from Bombay. It has two hotels at Bombay and one each at Delhi and Srinagar. It also has two flight kitchens at Bombay and Delhi airports. The recent addition to the Centaur hotel chain of the Company, has been the Centaur Hotel at Juhu Beach, Bombay, which was commissioned in October 1986.

INDIRA GANDHI RASHTRIYA URAN AKADEMI

The Indira Gandhi Rashtriya Uran Akademi was set up as an autnomous body under the administrative control of this Ministry. The Akademi is located at Fursatganj, Rae Bareilly, Uttar Pradesh. The main objectives of the Akademi are: (i) creation of an infrastructure for bringing about the desired improvement in the training of pilots, which, in turn, would result in qualitative improvements in the capabilities of commercial pilots; (ii) creation of facilities for the training of helicopter pilots, and (iii) provision of better qualified pilots to the national carriers (Air-India, Indian Airlines, Vayudoot and Helicopter Corporation of India) and to cater to the needs of state governments. The ground training at the Akademi commenced in June 1986 and the flying training from September 1986. The Akademi has acquired a fleet of 10 aircraft, two Robinson R 22 Beta helicopters, a simulator and other training aids.

DIRECTORATE OF AGRICULTURAL AVIATION

The administrative control of the Directorate of Agricultural Aviation has been transferred from the Ministry of Agriculture to the Ministry of Civil Aviation from 27 July 1987. Its functions and assets have been transferred to the Vayudoot Limited from 18 January 1988. It is responsible for conducting aerial operations for fighting locust invasion and breeding, for protecting various crops from pests and diseases and for aerial seeding.

COMMISSION OF RAILWAY SAFETY

Commission of Railway Safety is a statutory body set up under the Indian Railways Act, to monitor the observance of safety standards and safe working of the railways. In order to uphold its independence from the Railways, the Commission was separated from the Railway Board in 1941 and currently functions under the Ministry of Civil Aviation.

The Commission is headed by a Chief Commissioner of Railway Safety with its headquarters at Lucknow. It has 10 circles, each headed by a Commissioner of Railway Safety. The main functions of the Commission include the authorisation of new lines, extensions, doublings, electrification, etc., after personal inspection for the public carriage of passengers and inquiries into serious accidents. The Commission also advises on the running of new types of rolling stock, introduction of higher speed or longer trains, besides according sanction to modification to existing infrastructure and assets.

TOURISM

Tourism is now recognised as an industry generating a number of social and economic benefits. It promotes national integration and international understanding, creates employment opportunities and augments foreign exchange earnings. Tourism also gives support to local handicrafts and cultural activities.

International tourism in India has grown substantially over the last three decades. The number of foreign tourist arrivals (excluding Pakistan and Bangladesh) increased from 10,80,050 in 1986 to 11,63,744 in 1987. The annual growth rate has been erratic due to a number of factors. During the decade 1961 to 1970, the average rate of growth was about 8.4 per cent per annum. In the decade 1971-80, India experienced an annual growth rate of 12 per cent per annum. For the Seventh Plan period the aim is to achieve an annual growth rate of seven per cent in the tourist arrivals. India's share in the world tourist market at the beginning of the Seventh Plan was only 0.3 per cent.

Domestic tourism plays a very big role in the national objective of promoting social and cultural cohesion and national integration. Its contribution to generation of employment is also very high. The seasonal pattern of domestic tourism differs from that of foreign tourism.

The main objectives for the tourism sector in the Seventh Plan are: (i) faster development of tourism; (ii) according the status of an industry to tourism; (iii) re-defining the role of public and private sectors to ensure that the private sector investment is encouraged in developing tourism and the public sector investment is focused mainly on development of support infrastructure; (iv) exploiting tourism potential to support local handicrafts and other creative arts; (v) promoting national integration, and (vi) diversifying culture-oriented tourism to holiday and leisure tourism.

ORGANISATION

Several agencies in India are involved to develop and promote tourism at national and international levels. The agencies are: Department of Tourism, Directorate General of Tourism, Indian Institute of Tourism and Travel Management, National Council for Hotel Management and Catering Technology and India Tourism Development Corporation Ltd.

Department of Tourism is responsible for the promotion of India as a tourist destination, development of tourism infrastructure and facilities in the country. It also performs regulatory functions in the field of tourism. There are four regional offices located in Delhi, Bombay, Calcutta and Madras. These offices supervise the working of other tourist offices at Agra, Bangalore, Bhubaneshwar, Cochin, Goa, Hyderabad, Jaipur, Khajuraho, Port Blair and Varanasi. There is also a sub-regional tourist office in the north-eastern region at Guwahati which supervises the working of tourist offices at Shillong, Imphal and Itanagar. In addition, there is Gulmarg Winter Sports Project office in Srinagar and Jawahar Lal Nehru Institute of Skiing and Mountaineering at Gulmarg. Tourist offices are also located in Bangkok, Brussels, Chicago, Dubai, Frankfurt, Geneva, Kuala Lumpur, Kuwait, Kathmandu, London, Los Angeles, Milan, New York, Paris, Singapore, Stockholm, Sydney, Tokyo, Toronto and Vienna.

India Tourism Development Corporation, a public sector undertaking established in October 1966, is responsible for the creation, development and expansion of tourism. It provides varied services to tourists by way of accommodation, catering, transport, entertainment, shopping facilities, conventions, etc. It also produces, distributes and sells tourist publicity material and renders consultancy services in the field of tourism both in India and abroad. The ITDC operates the chain of Ashok hotels, beach resort accommodation, tourist transport services, duty free shops, a travel agency named Ashok Travels and Tours, sound and light shows and provides consultancy and management services.

Indian Institute of Tourism and Travel Management (IITTM) was set up in January 1983 with its registered office at New Delhi. It is designed as an institute for offering different level academic courses in the field of tourism and travel management and related areas.

National Council for Hotel Management and Catering Technology with its headquarters in New Delhi, acts as an apex body to coordinate training and research in the field of hotel and catering management. It is the main agency for planning and monitoring the activities of 12 institutes of hotel management and 12 foodcraft institutes and ensures uniformity in academic standards and procedure for selection and admission of candidates for various courses conducted by these institutes.

ACCOMMODATION AND OTHER FACILITIES

Department of Tourism has constructed forest lodges in the bird sanctuary at Bharatpur and the wildlife sanctuaries at Kaziranga, Sasangir, Jaldapara, Kanha and Dandeli. The ITDC is managing the forest lodge at Bharatpur and those at Kaziranga, Sasangir, Kanha, Kisli, Jaldapara and Dandeli are being run by state tourism development corporations.

Forest lodges at Betla, Dhangari, Ranthambore, Simlipal, Bandavgarh, Kuba Huts in Enjal (Gujarat), Nandankanan and Manas wildlife sanctuaries are at various stages of construction. Facilities have also been provided for viewing wildlife on boats, elephants and mini-buses at the sanctuaries at Bharatpur, Kaziranga, Manas, Kanha, Betla, Itanki, Nandankanan, Lamjao Park, Jaldapara, Corbett, Dudhwa, Ranthambore and Mudumalai.

For providing cheap and moderate accommodation for pilgrims at places of religious importance, a society called *Bharatiya Yatri Avas Vikas Samiti* was set up in 1978. The main objectives of the Samiti are to construct *yatrikas*; expand, maintain, promote existing and new *dharmashalas/sarais/musafirkhanas* and other similar institutions in the country. The Samiti has so far constructed yatrikas at Amarkantak, Chitrakoot, Didar, Nandmehar, Kampil and Onkareshwar. Yatrikas are also under various stages of construction at Maheshwar, Puri, Karaikal, Vrindavan, Gangasagar, Mayapur and Dwarkaji.

To promote tourist traffic, regulations relating to currency exchange controls and customs have been liberalised. While visas are required by visitors from all countries, landing permit is given to organised groups handled by approved travel agents. Concessional tickets are issued by the Railways for round-trip journeys and circular tours; special concessions are given to students. *Indrail* pass facilities are available for foreign tourists and Indian residents abroad against payment in convertible currencies. *Discover India* for travel on Indian Airlines domestic services for 21 days with unlimited stopovers enroute, is available to all persons permanently residing outside India including Indians against payment in foreign currencies. Besides, Indian Airlines have introduced two concessional fares. Indian Railways and Rajasthan State Tourism Development Corporation have jointly organised the *Palace On Wheels* train in order to promote places of tourist interest in Rajasthan. Department of Tourism has been actively promoting international charters to generate tourist traffic from the overseas market segments.

23 Communications

HISTORY OF POSTAL SERVICES

MODERN postal system in India dates back to 1837 when postal services were thrown open to the public. The first postage stamp was issued in Karachi in 1852, though it was valid only in Sind. The Postal Department was set up in 1854 when about 700 post offices were already functioning in the country. The money order system was introduced in 1880, the Post Office Savings Bank became operational in 1882 and the Postal Life Insurance in 1884. The Railway Mail Service began in 1907 and the Airmail Service in 1911.

The attainment of independence marked a watershed in the development of postal services whose role came to be recognised increasingly as an essential infrastructure of development. Due to expansion of postal network in successive five year Plans, the number of post offices has now risen to 1,44,829. As against 1,46,000 villages which were outside the postal system, called, "No Dak Villages", the decade 1956-66 witnessed the coverage of all the villages under the purview of the postal system. As against 2.25 lakh villages in the country which did not have the facility of daily delivery of mail as late as 1960, practically all the villages in the country came to be connected with the facility of daily delivery of mail by 1979.

The postal development of independent India is marked by distinct evidence of modernisation. The year 1972—the year of 25th Anniversary of India's Independence—was commemorated by the adoption of a scientifically designed six-digit postal index number code, popularly called PIN. The benefit of air-lift of the entire first-class mail was introduced on 1 April 1949. Since then several milestones such as quick mail service, recorded delivery, post and, above all, mechanisation and computerisation of postal operations, are witness to the resurgence of modern India's postal service.

For operational purposes, the country is divided into 19 postal circles placed under the control of an independent Postal Services Board which came into being with effect from 31 December 1984. The Ministry of Communications through the Department of Posts also performs certain agency functions, *e.g.*, PO Savings Bank and Postal Life Insurance.

POSTAL SERVICES

The number of post offices as on 31 March 1988 was 1,44,829-16,000 in urban areas and 1,28,829 in rural areas. On an average, a post office serves 4,731 persons and covers an area of 22.69 sq kms.

For opening a post office, a group of villages is identified and within this group a suitable village is selected for locating the post office. The aggregate population of the group of villages should be 1,500 or more in hilly, backward and tribal areas and 3,000 or more in other rural areas.

CONVEYANCE OF MAIL

The mail traffic has increased enormously in the country due to industrialisation and increase in population as well as in the rate of literacy. The mail is carried both by surface and air. For surface mail, various modes of conveyance such as rail, road, boats, camels, horses and cycles are used. All the principal cities connected by air are served direct and other cities are connected subsequently by surface. All inland letters, postcards, registered letters and money orders are normally carried by air without surcharge.

QUICK MAIL SERVICE

Quick Mail Service (QMS) was introduced in 1975. This service covers all state capitals, headquarters of all union territories and important commercial towns. All unregistered articles bearing the Postal Index Number (PIN) of the destination and posted in special QMS letter boxes are covered by the scheme. Letters posted under the scheme are delivered within the delivery norms prescribed. Within the states, the regional QMS connects most of the district headquarters to the state capitals. There are at present 45 national and 410 regional QMS centres in the country.

SPEED POST SERVICE

Under the Speed Post Service introduced on 1 August 1986, articles are delivered within a definite time frame, with 'money back guarantee' for any service defect. Initially introduced in seven cities, today the service covers 38 cities including Delhi, Bombay, Madras, Calcutta, Bangalore, Ahmadabad, Pune, Hyderabad, Kanpur, Cochin, Indore, Vadodara, Guwahati, Jaipur, Hosur, Faridabad, Ghaziabad, Thane and Surat.

SPEED POST MONEY ORDER

Speed Post Money Order service has been introduced from 13 May 1988 to serve the public through guaranteed and time-bound money transfer facility. It ensures payment of cash at door-steps of the payee within 24/72 hours, as is applicable in the case of Speed Post service. A nominal fee of Rs 5 is charged in addition to the standard commission. There is a special arrangement for payment of money orders on Sundays and holidays on an extra charge of Rs 3 per money order. The services are available in all the 38 speed post cities in the country.

PHILATELY

Department of Posts has been issuing special/commemorative postage stamps since 1931. During 1987, it issued 56 commemorative/special stamps including six on the *India-89* (World Philatelic Exhibition), four on Indian trees, two each on the Festival of India in USSR and the Festival of USSR in India, wildlife, Rotary International, eye donation and 100 years service to the blind, one each on Children's Day, *Phool Walon Ki Sair* and the International Year of Shelter for the Homeless.

FOREIGN MAIL ARRANGEMENTS

India is a member of the Universal Postal Union (UPU), Asian Pacific Postal Union (APPU) and Conference of Commonwealth Postal Administration (CCPA). The purpose of these organisations is to extend, facilitate and improve postal relations between member countries. Reduced postage rates are applied to letters and postcards exchanged by surface between the member countries of the APPU.

India has direct postal communications with almost all countries in the world. Mails for some countries are exchanged through a third country. Foreign mail originating in India is generally carried by ships and aeroplanes. An expedited mail service, also known as the International Speed Post Service, was introduced on 1 August 1986 to selected destinations abroad. As on 13 May 1988, this service was available to 29 countries. This is a time-bound delivery service guaranteeing delivery within a stipulated time frame, failing which 'money back guarantee' operates. The service will be progressively extended to more destinations. The country has also inward money order service with 32 foreign countries and outward service with Burma, Bhutan and Nepal.

PIN CODE

For efficient and correct handling of the growing volume of mail, a numerical postal address code, known as the Postal Index Number (PIN), was introduced in 1972. The code has six digits which helps identify and locate every departmental delivery post office excluding branch post offices. The first digit indicates the region, the second the sub-region and the third the sorting district whereas the last three digits indicate a particular delivery post office in the areas served by the sorting district.

POST OFFICE SAVINGS BANK

Post Office Savings Bank is the nation's largest savings bank with a network of 1,44,084 post offices providing service throughout the country. On 31 March 1988, the outstanding balances in all forms of national savings in post offices amounted to Rs 28,400.7 crore.

POSTAL LIFE INSURANCE

Postal Life Insurance (PLI) came into being on 1 February 1884 as a welfare measure for Government employees. After independence, with the initiation of a number of welfare schemes by the State for the welfare of its employees, the scope of PLI has been extended from time to time. At present, the benefits of PLI scheme are extended to various categories of employees. These are: (i) all Central and state government employees; (ii) employees of Government financial institutions; (iii) local fund/local bodies employees; (iv) employees of universities/kendriya vidyalayas/aided educational institutions; (iv) employees of nationalised banks; (vi) employees of Central/ state government public sector undertakings, and (vii) regional rural banks.

In the year 1987-88, the PLI reached a significant milestone with 13.62 lakh policies for a total sum assured of Rs 1,439.3 crore, whereas during the year 1985-86, the total number of policies was 12,15,981 with a total sum assured of Rs 1,070.91 crore.

MECHANISATION

With a view to improving the quality of service rendered by the Department of Posts and providing better customer satisfaction at the counters of the post offices, the Department has introduced several new 'counter machines'. There are 34,883 franking machines in use in the country, licensed both at the private premises and in the post offices. The phenomenal increase in the mail traffic, particularly commercial mail, has strained the service at the postal counters. With a view to expediting the disposal of bulk mail, the Department has imported 60 high speed franking machines and installed them in selected busy post offices in the metropolitan cities. These machines have been of great advantage, viewed from the voluminous traffic handled by them and the significant increase in the postage revenue earned through these machines which is an impressive 40 per cent of the total postage revenue for the Delhi circle.

COMPUTERISATION

The first computer was installed in Bangalore GPO on 16 August 1986. The Postal Life Insurance business of Karnataka circle has been brought under the computer for rendering more efficient customer service. A computer has also been installed in Madras for money order pairing work. The computer at Delhi is used for money order pairing work and international air mail accounting. The savings bank control operation for Delhi circle has begun and 'parallel run' is going on .

TELECOMMUNICATIONS

Telecommunication services were introduced in India soon after the invention of telegraphy and telephone. The first telegraph line between Calcutta and Diamond Harbour was opened for traffic in 1851. By March 1884, telegraph messages could be sent from Agra to Calcutta. By 1900, telegraph and telephone had started serving the needs of Indian Railways. As in case of telegraph, telephone service was also introduced in Calcutta in the year 1881-82, barely six years after the invention of the telephone. The first automatic exchange was commissioned at Shimla in 1913-14 with a capacity of 700 lines.

However, the development of telecommunications before independence was rather slow. At the time of independence the Government had a rudimentary telecommunication system of world standard. Ih April 1948, India had a total of only 321 telephone exchanges with about 82,000 working connections. There were only 338 long distance public call offices and 3,324 telegraph offices. The growth of telecommunication service has gained momentum after independence and by March 1988 India had about 13,000 telephone exchanges with a capacity of 43.3 lakh lines and having 38 lakh working connections. The number of long distance public telephones and telegraph offices is more than 26,500 and 37,700 respectively. The Indian Telecom network has thus recorded a tremendous growth of more than 40 times in 42 years of our independence. The detailed growth in respect of various items and activities since 1948 has been indicated in table 23.1. The number of effective metered calls put through, had remarkably increased from 'nil' in 1948 to 19,334 crore during the year 1987-88.

TABLE 23.1 GROWTH OF TELECOMMUNICATIONS

Item	As on 1 April				
	1948	1985	1986	1987	1988
1. Telephone exchange (Numbers)	321	10,712	11,480	12,084	12,930
2. Local exchange capacity (Lakh lines).	1.00	33.07	36.65	39.89	43.29
3. Direct working connections (DELs). (Lakh lines).	0.82	28.98	31.65	34.88	38.0
4. Telephone stations (Lakh)	1.68	37.74	40.57	44.20	47.56
5 Long distance public telephones (Numbers)	388	17,459	24,025	25,641	26,507
6. Local PCOs. (Numbers).	Nil	18,335	19,869	44,248	49,053
7. Trunk automatic exchanges (TAXs). (Numbers).	Nil	29	31	34	45
8. TAX capacity (Lines).	Nil	88,770	91,710	98,770	1,14,670
9. Trunk manual (Numbers).					
(i) exchanges	250	1,586	1,592	1,997	1,992
(ii) boards	250	8,098	8,315	8,460	8,570
10. Stations connected to TAXs (Numbers).	Nil	267	338	403	491
11. STD routes (Point to Point) (Numbers).	Nil	156	176	208	226
12. International Subscriber Dialling					
(i) No. of countries connected	Nil	6	11	20	176
(ii) No. of cities having ISD	Nil	4	76	400	491
13. Long Distance Network					
a) Coaxial cable (Route kms)	Nil	18,263	19,029	19,285	21,085
b) Microwave (Route kms)	Nil	21,226	22,537	25,838	27,923
c) Satellite stations.	Nil	31	32	32	65
14. Public telegraph offices (Numbers).	3,324	35,251	37,424	36,235	37,729
15. Telex exchanges (Numbers).	Nil	187	209	220	244
16. Telex exchange capacity (Lines)	Nil	39,094	40,675	43,948	47,059
17. Telex subscriber connections (Numbers).	Nil	26,253	30,180	34,044	37,464

TABLE 23.1 (Continued)

Item	As on 1 April				
	1948	1985	1986	1987	1988
18. Effective metered call units (Telephone) (Crore) during the preceding year.	Nil	1,206.9	1,382.4	16,484	19,334
19. Effective operator controlled trunk calls (Crore) during the preceding year.	4	20.2	21.4	21.5	20.91
20. Effective metered telex calls (Thousand)	Nil	2,09,462	2,81,341	3,58,349	3,59,783
21. Telegraph messages booked (Crore) during the preceding year.	2.7	6.512	5.958	6.086	6.475
22. Net fixed assets (Rs crore). (1987 and 1988 excluding MTNL)	37	3,728	4,417	4,140	5,008[1]
23. Gross revenue (Rs crore)	12.78	1,242.63	1,309.31	1,550	1,700[1]
24 Net income (surplus) (Rs crore) during the preceding year.	Nil	424.99	414.69	280	454[1]

1. Provisional

TELECOM SERVICES

LOCAL

The equipped capacity of telephone exchanges was 43.29 lakh lines as on 1 April 1988. The direct exchange lines as on 1 April 1988 were 38 lakh (local public call offices being 49,053), with a registered waiting list of about 12.63 lakh.

LONG DISTANCE

All the state capitals are connected to Delhi on subscriber dialled long distance network. The network comprises 45 trunk automatic exchanges with 491 stations connected to it. The performance of subscriber dialled network has considerably improved with the introduction of stored programme controlled electronic trunk automatic exchanges at Delhi, Bombay, Calcutta and Madras, and digital trunk automatic exchanges (E-10B) at Agra, Trichy, Lucknow, Rajkot, Vishakhapatnam, Bangalore, Raipur, Cuttuck, Surat, Jalandhar, Ludhiana, Varanasi and Ernakulam. As per the policy, in future all trunk automatic exchanges will be with electronic technology.

As on 31 March 1989, 7,717 long distance public telephones and 2,843 exchanges had been opened in the country, out of which 408 long distance public telephones on MARR and 103 electronic exchanges are in the rural areas. Telecommunication facilities have also been extended to inaccessible and difficult areas like Kalpa and Keylong in Himachal Pradesh; Kargil, Doda, Rajauri and Poonch in Jammu and Kashmir; Seppa, Anini, Ziro, Depariso and

Along in Arunachal Pradesh; Tuensang in Nagaland; Belchia in Tripura; Mayabunder in Andaman Islands; Phulbani in Orissa, and Srinagar Garhwal in Uttar Pradesh. This was facilitated by the setting up of 32 earth stations.

INTERNATIONAL TELEPHONE SERVICE

India's first intercontinental telephone exchange was commissioned in 1973. The International Direct Dialled (ISD) telephone service was first introduced from Bombay to UK. Now subscribers from 491 cities can dial directly to 176 countries.

TRANSMISSION SYSTEM

The long distance telecommunication network has 21,085 route km of coaxial cable and 27,923 route km of microwave media. There are 65 satellite stations for long distance telecommunication service.

TELEX SERVICE

The telex network has 224 exchanges with an equipped capacity of 47,059 telex lines and working connections of 37,464 lines. The introduction of electronic telex exchanges at Ahmadabad, Bombay, Calcutta, Chilkaluripet (AP), Cuddalore (Tamil Nadu), Delhi, Ernakulam and Palghat (Kerala), Hyderabad, Madras and Nizamabad (AP), has brought about qualitative improvement in telex services.

INTRODUCTION OF NEW SERVICES

The Department has a plan to introduce new services, like: (i) video tex, (ii) business subscribers network, (iii) remote area subscribers message network and (iv) cellular radio mobile service in the years to come. The remote area message network will be operational by the end of 1989. The packet switched public data network will be operational by the end of March 1990.

TELECOM QUALITY ASSURANCE

A separate Quality Assurance (QA) circle has been formed in 1986, to carry out inspections and tests on the equipment and materials procured by the DOT right from raw material stage to the finished product stage so as to ensure the improved quality of service to the subscribers. A Component Approval Centre for Telecommunications (CACT) has been set up in April 1985 in Bangalore with most modern testing facilities and is comparable with the best such institutions in Europe. The laboratory houses facilities for climatic and environmental tests, failure analysis and measurements on electronic components and printed cards.

TELECOM FACTORIES

Four departmental telecom factories set up at Bombay, Calcutta, Jabalpur and Bhilai manufacture a variety of equipment like manual, trunk and local boards, PBX boards, coin collecting box telephones, switch-board cords, DP boxes, CT boxes, line stores, telegraph equipment, microwave towers (steel lattice type), etc., used as inputs for development and operation of telecommunication services. The organisation has embarked upon an ambitious modernisation programme which includes installation of five new plants (two galvanising, one foundry, one tube making and one CT box projection) in telecom factories during 1987-88. During the year, the turnover was Rs 44.32 crore. The production target for 1988-89 was Rs 50 crore.

TELECOM MISSION

Telecommunication stands for modernity and economic development. But in India, there are only 38 lakh telephones for a population of nearly 7,500 lakh and with lesser accessibility in rural areas.

The Telecom Mission, one of the five technology missions, launched in 1986 aims at increasing the people's access to telephones; improving reliability by selective use of new technology to upgrade the existing network with special emphasis on rural areas, and modernising the national network to prepare India for the 'information age'.

WIRELESS PLANNING AND COORDINATION WING

Wireless Planning and Coordination Wing established in 1952, is a radio regulatory authority responsible for coordination and regulation of radio spectrum usages in the country and is the nodal agency for all matters concerning the International Telecommunication Union (ITU)-the specialised agency of United Nations for all telecommunication matters and Asia Pacific Telecommunity (APT)—an inter-governmental organisation of the region. The Wing, assisted by its monitoring organisation, performs all functions relating to planning, coordination, assignment, regulation and administration of the uses of radio frequencies in India, clearance of sites for the installation of wireless stations, issuing licenses for the establishment, maintenance and working of wireless stations in India, etc., under the Indian Telegraph Act, 1885. It is also responsible for all matters concerning assignment of frequencies and positions in the Geostationary Satellite Orbit (GSO) for communication satellite systems and necessary coordination in this regard both at national and international levels. It conducts examinations for awarding certificates of proficiency for aeronautical and maritime mobile services and arranges SACFA meetings.

MONITORING ORGANISATION

Monitoring Organisation has a network of monitoring stations set up to support the work of frequency management and implementation of radio regulations. Twenty one such stations are functioning at Ahmadabad, Ajmer, Bangalore, Bombay, Bhopal, Calcutta, Darjiling, Delhi, Dibrugarh, Goa, Gorakhpur, Hyderabad, Jalandhar, Madras, Mangalore, Nagpur, Ranchi, Shillong, Srinagar, Trivandrum and Vishakhapatnam. These stations monitor wireless transmissions of all government and non-government users, so that they function within the prescribed technical and operational parameters. These stations also investigate cases of harmful interference and collect data on vacancy/occupancy of radio frequency spectrum. Four microwave monitoring mobile terminals have also been established to monitor emissions in microwave frequency bands to ensure mutual compatibility between various services like microwave LOS links, radars, etc. The organisation has ten inspection wireless units at Ajmer, Bangalore, Bombay, Calcutta, Delhi, Hyderabad, Jalandhar, Madras, Nagpur and Shillong, which carry out periodic physical inspection of authorised radio stations and licensed wireless stations in the country for adherence to and conformity with radio regulatory stipulations. Five radio noise survey units at Bombay, Calcutta, Delhi, Madras and Hyderabad are conducting radio noise surveys for suppression of man-made radio noise as also for identifying interference-free sites for radio installations.

RESEARCH AND DEVELOPMENT

Research and Development activities in the field of telecommunications have been entrusted to an autonomous society called the Telecom Research Centre (TRC), New Delhi. The existing TRC, now called as TEC provides engineering support to the Department of Telecommunications and draws up specifications etc. The TEC has absorbed the acquired technology in respect of the newly introduced digital switching equipment. It prepares site data bases and is a repository for the software versions of switching elements in operation in the country. It validates and administers the product management. For this purpose, it has installed and operates a software centre with the necessary hardware and software tools.

UNDERTAKINGS

TELECOMMUNICATIONS CONSULTANTS INDIA LIMITED

Telecommunications Consultants India Ltd. (TCIL) was set up in 1978 under the Ministry of Communications to provide technical and economical services in all fields of telecommunications to clients in India and abroad. The TCIL has executed/is executing projects in more than 24 countries. The TCIL has not only completed the projects in different developing countries of Asia and Africa but has also exported software expertise to some European countries and USA. It is also setting up a factory for the manufacture of 'intelligent terminals' in Delhi and a cable factory for manufacture of jelly-filled cables in Tamil Nadu, apart from setting up a Video tex service in Delhi.

MAHANAGAR TELEPHONE NIGAM LIMITED (MTNL)

MTNL was formed on 1 April 1986 to take over the management, control and operation of the telecommunication services of Bombay and Delhi telephone districts. The Nigam is providing wide range of services like telephone, telex, cellular radio, mobile telephone, radio paging, data communication and a large number of telematic services.

For the upgradation of services, a well-planned and integrated scheme has been launched to improve the services significantly by 1990. This includes replacement of old telephone instruments, fault-prone cables and old and worn out exchanges, upgradation of outdoor plants, use of high grade media for junctions, construction of underground duct system, large scale introduction of modern testing and computer aids, single window subscribers interface, improving accessibility of telephone by installation of a large number of public call offices and opening of communication bureaux at various places, computerised fault repair service, introduction of detailed billings, etc.

VIDESH SANCHAR

Videsh Sanchar Nigam Ltd. formed on 1 April 1986 after conversion of the Overseas Communication Service, is responsible for India's external telecommunication services and operates from four regional centres at Bombay, New Delhi, Calcutta and Madras.

International services are provided by means of Intelsat services positioned over the Indian Ocean region through two earth stations, one at Arvi near Pune and the other at Dehra Dun and two submarine wide-band telephone cable systems, one linking Madras with Malaysia, the IOCOM cable system, and the other linking Bombay with Fujairah, UAE, the Gulf cable system.

VSN provides international telecommunication services like telephone, telex, leased services, bureaufax, packet switches, radio photo, television, teleconference, voicecasts, multi-address broadcast, Press newscast, etc. It also provides intelcom bureau, meteorological services, standard time and frequency service, etc.

INDIAN TELEPHONE INDUSTRIES LIMITED

Indian Telephone Industries Limited (ITI), Bangalore is engaged in the production of a wide range of telecommunication equipment, catering to the needs of Department of Telecommunications, Railways, Defence and private customers. The Undertaking has five production units at Bangalore, Naini, Palghat, Rae Bareilly and Srinagar and two research and development divisions, one each at Bangalore and Naini. Another unit of ITI is being set up at Mankapur (UP) for manufacture of E-10B type electronic switching equipment. The targetted production of digital electronic switching equipment is 3.45 lakh lines during 1988-89. It will become five lakh lines per annum when the project is completed by 1990.

During 1987-88, the turnover of the Company was Rs 508.48 crore against the turnover of Rs 440.70 crore during 1986-87. The Company manufactured 7.76 lakh numbers of telephone instruments, 98,352 crossbar lines, 2,59,572 electronic lines and 1,54,238 strowger lines besides transmission equipment worth Rs 109.76 crore.

HINDUSTAN TELEPRINTERS LTD

Hindustan Teleprinters Ltd. (HTL), Madras, a public sector undertaking, is engaged in the manufacture of teleprinters data moderns, ancillary equipment and electronic typewriters, catering to the needs of the Department of Telecommunications, Defence, and other users.

During 1987-88, the Company achieved a gross turnover of Rs 2,748.62 lakh including accretion/decretion to stock and trade and work in progress, as compared to Rs 2,013.18 lakh during 1986-87, accounting for an increase of 37 per cent. The income from sales during the year amounted to Rs 1,926 lakh *vis-a-vis* Rs 1,094 lakh in the previous year.

HINDUSTAN CABLES LTD

Hindustan Cables Ltd. is a Government of India undertaking in the field of telecommunications. The Company has three production units, one at Rupnarainpur (West Bengal), set up in the year 1952 and the other two at Hyderabad (Andhra Pradesh). The Rupnarainpur unit started production in 1954. The first unit at Hyderabad was commissioned in 1974 and the second unit started commercial production from the end of 1985. It is producing all types of telecommunication cables, catering to the telecommunication needs in vital sectors like the Department of Telecommunications, Railways, Defence and other organisations in the country, in addition to exporting telecommunication cables to West Asia, Far East and the USSR.

24 Labour

LABOUR policy in India derives its philosophy and content from the Directive Principles of the Constitution and has been evolving in response to the specific needs of the situation to suit the requirements of planned economic development and social justice. It has been envisaged that the growth of the economy would not only increase production, but also absorb the backlog of unemployment and under-employment and a substantial proportion of the additional labour force. The Seventh Plan lays emphasis on harnessing the country's abundant human resources and improving their capabilities for development. The objectives of manpower planning are to ensure proper linkage of economic planning with manpower and educational planning so that no plan programme suffers from lack of trained manpower that is needed.

WORKING POPULATION

The working population of India in 1985 stood at 26.98 crore with annual increase of 2.55 per cent and is expected to be 30.61 crore by 1990. In the organised sector of India's economy, the largest number of workers are employed in factories.[1] In 1985, the estimated average daily employment in working factories stood at 76.91 lakh. Maharashtra had the largest number of factory workers[2] (11,89,884) followed by West Bengal (9,18,950), Tamil Nadu (8,27,243), Gujarat (6,68,031) and Andhra Pradesh (5,81,279). The average daily number of workers employed in all mines in 1985 was 7,88,661 (3,42,949 below ground, 1,92,788 in open-cast mines and 2,52,924 above ground). The corresponding figure for coal mines covered by the Mines Act, 1952, for 1985 was 5,51,000. The distribution of working population according to activity and sex is given in table 24.1.

WAGES, ALLOWANCES AND BONUS

The average per capita annual earnings of factory workers in different states and union territories are given in table 24.2.

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[1] Under the Factories Act, 1948, a factory is defined as any premises including the precincts thereof where 10 or more workers are working or were working on any day of the preceding twelve months and in any part of which power is used for the manufacture. Where power is not used, the number of workers should be 20 or more.

[2] A worker is defined in the Act as a person, employed directly or through any agency including a contractor whether for wages or not, to any manufacturing process, or in cleaning any part of the machinery or premises used for a manufacturing process or in any other kind of work incidental to or connected with the manufacturing process or the subject of the manufacturing process.

TABLE 24.1 WORKING AND NON—WORKING POPULATION—1981 CENSUS (Lakh)

Category	MALE		FEMALE		TOTAL	
	Number	Percentage share in total male population	Number	Percentage share in total female population	Number	Percentage share in total population
Working Population Total (A + B)	1,810	52.65	636	19.77	2,446	36.77
A. Total Main Workers	1,775	51.62	450	13.99	2,225	33.45
(i) Cultivators	776	22.56	149	4.65	925	13.91
(ii) Agricultural labourers	347	10.10	208	6.46	555	8.34
(iii) Household industry	56	1.64	21	0.64	77	1.16
(iv) Other workers	596	17.32	72	2.24	668	10.04
B. Marginal Workers	35	1.03	186	5.77	221	3.32
C. Total Non-Working Population	1,629	47.35	2,578	80.23	4,207	63.23
D. Total Population (A + B + C)	3,439	100.00	3,214	100.00	6,653	100.00

EARNINGS

The variation in money earnings is shown in table 24.3

REGULATION OF WAGES

The payment of wages is governed by the Payment of Wages Act, 1936 and Minimum Wages Act, 1948, as amended from time to time and extends to the whole of India except Sikkim. The Payment of Wages Act, 1936 applies to persons employed in any factory including the establishment declared as factories under the Factory Act, 1948 and in any railway and industrial establishment such as tramway or motor transport service, air transport service, docks, inland vessels, mines, quarries or oilfields, plantations, workshops in which articles are produced and establishments in which any work relating to the construction, development or maintenance of buildings, roads, bridges or canals. etc., is being carried on. It applies only to those who are in receipt of wages, the average of which falls below Rs 1,600 per month.

Employers can not withhold the wages earned by workers, nor can they make any unauthorised deduction. Payment must be made before the expiry of a specified day after the last day of the wage period. Fines can be imposed for only those acts of omission which have been approved by the appropriate authority and must not exceed an amount equal to three per cent of the wages payable. If the payment of wages is delayed or wrongful deductions are made, the workers or their trade unions can file a claim. The payment of overtime in scheduled employment is governed by the Minimum Wages Act, 1948.

MINIMUM WAGES ACT

Minimum Wages Act, 1948 empowers the government to fix minimum

TABLE 24.2 AVERAGE PER CAPITA ANNUAL EARNINGS OF FACTORY WORKERS (Rs)

State/Union Territory	1976	1978	1980	1981	1982	1983[1]	1984[1]
Andhra Pradesh	3,731	3,625	5,186	6,095	7,174	7,123	6,660
Assam	3,504	4,673	4,494	5,891	3,999	6,384	7,545
Bihar	5,262	5,527	5,584	5,760	5,277	7,861	7,231
Gujarat	4,793	5,645	8,544	7,320	7,505	9,502	9,482
Haryana	4,931	5,664	6,401	7,059	7,544	8,320	8,713
Himachal Pradesh	4,395	3,636	4,745	7,022	6,334	7,146	7,146
Jammu and Kashmir	2,087	3,400	4,069	5,082	5,157	5,437	5,429
Karnataka	3,042	NA	4,903	7,545	14,301	NA	NA
Kerala	5,253	4,936	7,146	6,948	8,192	7,908	9,324
Madhya Pradesh	6,378	7,391	7,964	8,299	8,972	9,318	11,291
Maharashtra	5,680	7,210	7,190	8,762	7,280	8,376	10,673
Manipur	—	—	—	—	—	4,265	5,719
Nagaland	—	—	—	—	—	17,698	NA
Orissa	5,417	6,119	6,728	7,497	8,445	10,466	10,281
Punjab	3,675	4,285	5,196	5,642	6,456	9,638	7,498
Rajasthan	4,954	5,811	6,698	7,493	7,830	8,683	8,816
Tamil Nadu	4,817	5,388	6,477	6,907	7,189	7,840	9,627
Tripura	2,251	3,630	7,937	2,454	2,454	2,440	4,476
Uttar Pradesh	4,486	5,418	6,376	6,775	6,640	NA	NA
West Bengal	5,840	6,970	7,977	8,149	9,208	10,545	11,606
Andaman and Nicobar Islands	2,831	3,620	4,096	6,280	5,408	4,411	10,060
Delhi	5,092	5,528	6,228	5,999	7,197	5,838	10,180
Goa, Daman and Diu	5,965	5,715	5,211	11,886	7,276	7,869	11,224
Pondicherry	4,879	5,473	8,066	8,694	5,628	10,484	10,827
All India	5,125	6,068	6,997	7,416	7,532	8,440	9,611

NOTE: 1. Provisional. The data given in the table from 1976 to 1982 relates to workers earning less than Rs 1,000 per month and for the year 1983 it relates to workers earning less than Rs 1,600 per month.

2 The information relating to factory workers excludes those for railway workshops and groups of industries, seasonal in character, consisting of food, beverages, tobacco and construction. The data for the year 1983 also includes the information in respect of the factories under section 85 of the Factories Act, 1948 and is thus not strictly comparable with that for the earlier years.

NA means not available.

TABLE 24.3 INDEX OF EARNINGS OF WORKERS

Base 1976 = 100

	1976	1977	1978	1979	1980	1981	1982
General Index of earnings	100	112	118	124	137	147	153

wages of employees working in specified employments. It provides for review and revision of minimum wages already fixed after suitable intervals not exceeding five years. However, the Labour Ministers' Conference in July 1980 recommended that the revision of minimum wages should be made within two years or on a rise of 50 points in the consumer price index, whichever is earlier.

The Central government is the appropriate agency in relation to any scheduled employment carried on by or under the authority of it or in railway administration or in relation to mine, oil field or major port or any corporation established under the Central Act. The state governments are the appropriate agency in relation to other scheduled employments. The Central government is concerned to a limited extent with building and construction activities mostly carried on by the Central Public Works Department, the Ministry of Defence, etc., and the agricultural farms under the Ministries of Defence and Agriculture. The bulk of the employment falls under the state spheres and the state governments are required to fix/revise the wages and ensure their implementation in respect of the scheduled employments within their spheres. Enforcement of Minimum Wages Act in the Central sphere is secured through the Central Industrial Relations Machinery.

WORKING JOURNALISTS ACT

Working Journalists and other Newspaper Employees (Conditions of Service) and Miscellaneous Provisions Act, 1955 regulates the conditions of service of working journalists and other persons employed in newspaper establishments. By a specific provision of this Act, the provisions of the Industrial Disputes Act with certain modifications have been applied to working journalists. The Act was amended by an ordinance on 26 July 1981 to provide for amplification of the definition of the term 'working journalist', so as to include part-time correspondents and prevention of dismissal/discharge/retrenchment of newspaper employees (including part-time correspondents) by newspaper establishments in order to avoid payment of wages as revised by the Central government. The Ordinance was subsequently replaced by an Act of Parliament.

The Act provides for constitution of wage boards/tribunals to make recommendations about payment of wages to various classes of journalists and non-journalist employees in newspaper establishments. The wages are presently being paid as per the recommendations of Palekar Tribunal, which gave its recommendations to the Government on 13 August 1980. The Government orders on the recommendations with slight modifications were published on 20 July 1981.

The Government had set up two wage boards—one for working journalists and the other for non-journalist employees—on 17 July 1985, under the chairmanship of Justice UN Bachawat, a retired judge of Madhya Pradesh High Court. The boards have submitted their *interim* reports recommending grant of interim relief at 7.5 per cent of the basic wages subject to a minimum of Rs 45 from 1 May 1986. After considering the recommendations of the wage boards and the representations received thereon, the Government has announced the grant of interim relief at 15 per cent of basic wages subject to a minimum wage of Rs 90. The decision has been made effective from 1 June 1986.

CONTRACT LABOUR

Contract Labour (Regulation and Abolition) Act, 1970, which became applicable to the whole of India in February 1971, provides for the regulation of employment of contract labour in certain establishments and for its abolition in certain circumstances. It fixes responsibility on the principal employer for payment of wages in case of defaults.

EQUAL REMUNERATION FOR MEN AND WOMEN WORKERS

Equal Remuneration Act, 1977 provides for payment of equal remuneration to men and women workers for "the same work or a work of similar nature" and for the prevention of discrimination against women in matters of employment. The provisions of the Act have been extended to all employments. The Act provides for setting up of advisory committes for advising the Government on increasing employment opportunities for women. Such committees have already been set up under Central government as well as in most of the states and union territories. An enforcement machinery has been set up at Central and state level under the Act.

The Equal Remuneration Act has recently been amended to prevent discrimination against women in conditions of service subsequent to employment such as promotions, training etc. The penalities have been enhanced as a result of the amendment. The Act also permits social welfare organisations recognised by the Government to file complaints in the court in respect of any offence under its provisions.

BONDED LABOUR

The bonded labour system was abolished all over the country from 1975 through the Bonded Labour System (Abolition) Act, 1976. The Act envisages release of all the bonded labourers and simultaneous liquidation of their debts. The new 20-Point Programme stipulates full implementation of laws abolishing bonded labour system which implies (1) identification, (2) release, (3) action against offenders, (4) constitution and holding of regular meetings of the vigilance committees at district and sub-divisional levels, (5) conferring of the powers of judicial magistrates on executive magistrates under section 21 of the Act and (6) maintenance of the registers, etc., as prescribed under rule 7 of the Bonded Labour System (Abolition) Act, 1976.

Under his Act, the responsibility for identification, release and rehabilitation of bonded labourers lies entirely with the state governments. The incidence of bonded labour system has been reported from 12 states *viz.*, Andhra Pradesh, Bihar, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh and Haryana. As per the latest reports received from the state governments, the total number of bonded labourers identified and freed as on 31 March 1988 was 2,35,670.

With a view to supplementing the efforts of the state governments, a Centrally-sponsored scheme has been in operation since 1978-79 under which the state governments are provided Central financial assistance for rehabilitation of bonded labourers. The scheme envisages provision of rehabilitation grant up to a ceiling limit of Rs 6,250 per bonded labourer, half of which is given as Central share. A sum of Rs 2,739.97 lakh has so far been released under this scheme since 1978-79. The state governments have been requested to integrate this scheme with other anti-poverty programmes to pool the resources available under different schemes for the purpose of effective rehabilitation of bonded labourers.

BONUS

The right to share the profit of a concern was conferred on workers under the Payment of Bonus Act, 1965. The Payment of Bonus (Second Amendment) Act, 1980 provides for payment of a minimum bonus of 8.33 per cent or Rs 100, whichever is higher, irrespective of whether there is allocable surplus or not. Bonus up to a maximum of 20 per cent of the annual wages is payable under this law in accordance with a prescribed formula. Bonus may be paid under a different formula linked to production/productivity in lieu of allocable surplus by mutual agreement between employers and the workers subject to a limit of 20 per cent. The Act is not applicable to public sector enterprises except those operating in competition with similar undertakings in the private sector. It is also not applicable to institutions not working for profit like Reserve Bank of India, Life Insurance Corporation of India and departmentally managed undertakings. All banks are, however, covered.

Under Section 32 (iv) of the Payment of Bonus Act, 1965, the employees employed by an establishment engaged in any industry carried on by or under the authority of any department of the Central government or a local authority stand excluded from the purview of this Act.

By an amendment made to the Act in 1985, the Government has raised the limit of wages for payment of bonus to employees from Rs 1,600 to Rs 2,500 per month. The employees drawing wages of more than Rs 1,600 and up to Rs 2,500 will however be paid bonus considering that the salary of such employees is Rs 1,600 only.

INDUSTRIAL RELATIONS

Industrial Disputes Act, 1947 is the principal Central legislation which provides a machinery for the settlement of industrial disputes. In addition, the Code of Discipline (1958) and the Industrial Truce Resolution (1962) also help in the promotion and maintenance of good industrial relations.

INDUSTRIAL EMPLOYMENT (STANDING ORDERS) ACT

Industrial Employment (Standing Orders) Act, 1948 is applicable to industrial establishments wherein 100 or more workmen are employed. The appropriate authority can also extend the provisions of the Act to establishments employing less than 100 workmen after giving two months' notice. In so far as the Central sphere is concerned, the Act has been extended from 19 May 1982 to establishments employing 50 or more but less than 100 workers or so on any day of the preceding twelve months.

The Act lists out the matters which have to be provided in the standing orders of an industrial establishment. These broadly relate to conditions of recruitment, discharge, disciplinary action, holidays, etc., in relation to workers employed in industrial undertakings. Through a notification in 1983, additional items like service record, confirmation, age of retirement, transfer, medical aid in case of accidents, etc., were added to the Schedules and the model standing orders were also notified.

Every industrial establishment to which the Act is applicable has to frame standing orders and get the same certified by the appropriate authority. The Central government is the appropriate agency in respect of industrial establishments under its control-the railway administration, major port, mine or an oil field. The Act does not apply to an industrial establishment, If the workmen therein are covered by FRs and SRs, CCS (CCA) rules, etc., or any other rules notified by the appropriate authority. The Central government has framed the model standing orders applicable to industrial establishments in general and to coal mines.

The Act was amended in 1982, in which the term 'workman' and 'wages' were redefined so as to make the same as in the Industrial Disputes Act, 1947. A separate substantive provision was made for payment of subsistence allowance to workmen suspended and the allowance is equal to 50 per cent of wages for first 90 days, and thereafter, 75 per cent where workman is not responsible for delay.

WORKS COMMITTEES

Works committees have been set up in industrial establishments employing one hundred or more workers. They comprise equal number of representatives of employers and workers and aim at promoting measures for securing and preserving amity and good relations between the two parties. On 31 December 1987, works committees were functioning in 536 establishments.

WORKERS' PARTICIPATION IN MANAGEMENT

The Government reviewed the working of earlier schemes on workers' participation which were introduced in October 1975 and January 1977, respectively, and in the light of the review and the experience gained so far in the implementation of the schemes, the Government introduced a new and comprehensive scheme for workers' participation *vide* Resolution dated 30 December 1983 in the Central public sector undertakings. The state governments were requested to introduce the scheme in their own public sector undertakings. The private sector would also be encouraged to implement the scheme.

The Tripartite Committee, constituted under the scheme, comprising representatives of some of the Central ministries/state governments, major public sector undertakings and central trade union organisations, reviews the progress of the scheme from time to time and suggests remedial measures. A monitoring cell has also been created to assist the Committee.

The scheme has been introduced at the shop floor/plant level in 100 Central public sector undertakings. In addition, another 34 enterprises have implemented some kind of participative management.

CODE OF DISCIPLINE

Code of discipline, requiring employers and workers to utilise the existing machinery for the settlement of disputes and avoiding direct action, was evolved at the Indian Labour Conference in 1958. It has been accepted by all the Central organisations of employers and workers and several others.

The implementation organisations at the Centre and in the states, assist in settling disputes. The Central organisations of employers and workers and public sector undertakings, except the All India Trade Union Congress, have set up committees or cells to screen cases for dissuading their affiliate members from filing appeals in higher courts against the judgments of lower courts like industrial tribunals, labour courts, etc., in keeping with the letter and spirit of the code. A similar procedure for screening cases of appeals proposed to be filed by Central undertakings has been in operation since 1964.

GRIEVANCE PROCEDURE

Under the Code of discipline, managements have to establish a procedure to ensure full investigation of disputes to help in their settlement. The Central industrial relations machinery persuades managements to set up grievance procedure in undertakings falling in the Central sphere.

LAY OFF AND RETRENCHMENT

Under the Industrial Disputes (Amendment) Act, 1976, reasonable restrictions have been put on employers' right to lay-off, retrenchment and closure. Now, the employer has to seek prior approval of a specified agency or the appropriate authority stating clearly in the application the reasons for laying off, retrenchment and closing of industrial establishments where 100 or more workers are employed.

CONCILIATION AND ADJUDICATION

The Central industrial relations machinery, known as the Central Chief Labour Commissioner's Organisation, is responsible for the prevention, investigation and settlement of industrial disputes under the Industrial Disputes Act, 1947. It also enforces some labour laws in the Central sphere.

When industrial disputes can not be resolved by mutual negotiations, the conciliation machinery steps in. It is compulsory for the conciliation officer to hold conciliation proceedings when an industrial dispute exists or is apprehended in a public utility service and a notice under Section 22 of the Industrial Disputes Act, 1947 has been received, but it is optional in the case of other industrial establishments.

The bill to amend the Act, particularly with a view to reducing multiplicity of trade unions and influence of non-workmen in trade unions, was introduced in Parliament in May 1988.

The Industrial Disputes Act also provides for voluntary or compulsory adjudication of industrial disputes. Ten Industrial Tribunals-cum-Labour Courts have been set up to adjudicate disputes in the Central sphere. Of these, three are at Dhanbad, two at Bombay and one each at Calcutta, Jabalpur, Delhi, Chandigarh and Kanpur. The states have their own tribunals and labour courts. The Tribunal-cum-Labour Court at Calcutta and one of the Industrial Tribunal-cum-Labour Courts at Bombay, are functioning as national tribunals.

NATIONAL LABOUR INSTITUTE

National Labour Institute was set up by the Government in 1972. It became operative on 1 July 1974 as an autonomous institute. The education and training programmes of the Institute are primarily designed to benefit labour administrators of Central and state governments, leaders of trade unions, organisers of rural poor, leaders of the agrarian workers' unions and managers and supervisors of public and private sector industries.

WORKERS' EDUCATION

The Workers' Education Scheme, launched in 1958, is implemented through the Central Board of Workers' Education. The Scheme aims at equipping all sections of workers including rural workers for effective participation in social and economic development of the nation, developing among them a greater understanding of the problems of their social and economic environment and their responsibilities, and promoting leadership from among the rank and file of workers.

The Board currently operates the programme in three tiers: (i) selects education officers by open competition and trains them; (ii) posts the education officers in different regional centres for imparting training to selected workers as teachers, and (iii) ensures that the worker-teachers, on completion of their training, conduct programmes for the rank and file of workers in their respective units. The programmes are conducted for various categories of workers in industries, mines, plantations, agricultural and unorganised sectors.

The Indian Institute of Workers' Education, Bombay, conducts national level programmes for Board's training officers and for trade union activists sponsored by central trade union organisations and federations. It also serves as a clearing house of knowledge for regional and sub-regional centres of the Board. Selected workers are trained at the regional and sub-regional centres as worker-teachers in full-time continuous training courses of three months duration in batches of about 25 each. The trainees are sponsored by trade unions and are released by employers with full wages and are treated as on duty. In the syllabus, trade formation and its development and functions are covered. In addition, a good deal of coverage is given to duty aspect, national outlook and community interests. A fair knowledge of the history of our country, particularly the freedom struggle, the saga of sacrifice and service in the cause of freedom, understanding of economic perspective of the country in order to appreciate the progress since independence and the realities of the present situation, are also included. 'The Nation First' approach is stressed in all training programmes.

The Board has also evolved several specialised short-term programmes to meet the growing needs of workers in public, private, cooperative and rural sectors. Joint courses for representatives of management and workers are also organised. Special courses are organised on leadership development, productivity, education and participative management for workers and management personnel.

Tailor-made programmes are designed to meet the functional educational needs of the handicapped workers, women workers, construction workers, etc. The Board launched programmes for rural workers on selective basis under a pilot project in 1977-78. These have now become a regular feature. The cardinal objective of the rural workers programme is to help the rural workers understand and solve their own problems through self-help and develop their own organisations. It has started the programme of training workers from small scale industries/unorganised sectors from September 1980. It also expanded the activities for spreading functional adult literacy among the workers.

The Board gives grants-in-aid to the extent of 90 per cent of the total admissible expenditure to the trade unions for conducting short-term programmes of 14 days' duration.

CHILD LABOUR

In order to cater to the needs of child labour, the Central Board of Workers' Education has opened a sub-regional centre in Sivakasi in Tamil Nadu, where there is a concentration of child labour in 'match industries.' Special programmes are not only conducted for child labour in the form of week-end courses, but two-day awareness programmes are also being conducted for the parents of child labourers.

The Board publishes textual and pictorial booklets in English on trade unionism, industrial relations, labour laws, labour economics, productivity, family welfare, safety, etc., for the use of workers, which are also available in Hindi, Assamese, Bengali, Gujarati, Kannada, Malayalam, Marathi, Oriya, Punjabi, Tamil, Telugu, Nepali and Urdu at a nominal price.

In one of the judgments in 1984, the Supreme Court desired that the CBWE should organise periodic camps near the sites of stone quarries and stone crushers in Faridabad (Haryana) to enlighten the workers of this unorganised sector, on their rights and entitlements. Accordingly, the Faridabad regional centre of CBWE started conducting educational camps for these workers since January 1984.

The Board collaborates with agencies like UNFPA-ILO, etc., for conducting various programmes relating to population and family welfare education. It has so far completed three such projects. The current project is on family welfare education for rural workers. It has also integrated in its syllabi of various training programmes, the component of population and family welfare education at national, regional and plant levels both in organised as well as unorganised sectors including rural and ill-organised sectors.

TRADE UNIONISM

Labour protests on an organised scale were not unknown in India prior to the First World War (1914-18). Organised action by workers was reported in the first fourteen years of this century in many parts of country. In some, it was in response to the demand of workers and in others the motive was political.

The establishment in 1919 of the ILO had its influence on the growth of unions in the country. While some unions chose to operate independently and confined their activities to an industrial centre/unit, others felt the need for coordination of their activities at the national level. A section of the Indian working class thought in terms of even wider international unity of the workers through the opportunity offered by the ILO. The formation in 1920 of an all-India federation, *viz.*, All India Trade Union Congress, was the result of all these activities. The passing of the Trade Unions Act, 1926 gave a formal recognition to the workers' right to organise.

TRADE UNIONS ACT

Trade Unions Act, 1926 provides for the registration of trade unions. Any seven or more members of a trade union may, by subscribing their names to the rules of the trade union and otherwise complying with the provisions of the Act with respect to registration, apply for registration of the trade union under the trade which comes under the Trade Unions Act. The Act gives protection to registered trade unions in certain cases against civil or criminal action.

MEMBERSHIP OF TRADE UNIONS

Verification of membership of Central trade union organisations for the purpose of giving representation on tripartite consultative bodies, development councils, boards, etc., at national and international levels, including International Labour Organisation, is done by the office of the Chief Labour Commissioner (Central). The last general membership verification, as on 31 December 1968 of unions affiliated to four Central trade union organisations, *viz.*, Indian National Trade Union Congress (INTUC), All India Trade Union Congress (AITUC), Hind Mazdoor Sabha (HMS) and United Trade Union Congress (UTUC), was undertaken during 1969.

With the emergence of new trade union organisations claiming all-India character and membership, it was decided to undertake verification of membership, as on 31 December 1977 and 31 December 1979, of unions affiliated to 10 Central trade union organisations, *viz.*, (i) Indian National Trade Union Congress (INTUC), (ii) All India Trade Union Congress (AITUC), (iii) Hind Mazdoor Sabha (HMS), (iv) United Trade Union Congress (UTUC), (v) Centre of Indian Trade Unions (CITU), (vi) Bhartiya Mazdoor Sangh (BMS), (vii) United Trade Union Congress (UTUC) (LS), (viii) National Front of Indian Trade Unions (NFITU), (ix) Trade Union Coordination Centre (TUCC) and (x) National Labour Organisation (NLO).

However, verification could not be undertaken in the absence of consensus amongst the Central organisations of workers. The Government evolved a procedure after going through their views. Accordingly, the 10 Central organisations were addressed for submission of their claims as on 31 December 1980 for the purpose of general verification. All the Central trade union organisations except AITUC and CITU submitted their claims. Membership figures of unions affiliated to AITUC and CITU were collected from the records of the Registrar of Trade Unions. The general verification work initiated in November 1981 has since been completed and the final verification results as on 31 December 1980 are given in table 24.4.

SOCIAL SECURITY

WORKMEN'S COMPENSATION ACT, 1923

A beginning was made in social security with the passing of the Workmen's Compensation Act in 1923. The Act provides for payment of compensation to workmen and their dependents in case of injury by accident (including certain occupational diseases) arising out of and in the course of employment and resulting in disablement or death. The Act applies to railway servants and persons employed in any such capacity as is specified in Schedule II of the Act.

TABLE 24.4 MEMBERSHIP OF CENTRAL TRADE UNION ORGANISATIONS

Central Organisation	Claimed		Verified	
	No. of Unions	Membership	No. of Unions	Membership
1. INTUC	3,457	35,09,326	1,604[1]	22,36,128[1]
2. BMS	1,725	18,79,728	1,333[1]	12,11,345[1]
3. HMS	1,122	18,48,147	426	7,62,882
4. UTUC (LS)	154	12,38,891	134	6,21,359
5. NLO	249	4,05,189	172	2,46,540
6. UTUC	618	6,08,052	175	1,65,614
7. TUCC	182	2,72,229	65	1,23,048
8. NFITU	166	5,27,375	80	84,123
9. AITUC	1,366[2]	10,64,330[2]	1,080	3,44,746
10. CITU	1,737[2]	10,33,432[2]	1,474	3,31,031
Total	9,776	1,23,86,699	6,543	61,26,816

Figures do not include the membership figures of 13 unions of the BMS and one of the INTUC in the Post and Telegraph Department as an objection has been raised in this regard. A final decision will be taken after further examination of the issue.

Figures shown as claimed membership of AITUC and CITU have been obtained from the records of respective Registrar of Trade Unions as these unions failed to submit them.

Schedule II includes persons employed in factories, mines, plantations, machanically-propelled vehicles, construction works and certain other hazardous occupations. The minimum rate of compensation for permanent disablement and death have been fixed at Rs 24,000 and Rs 20,000 respectively. The maximum amount for death and permanent total disablement can go up to Rs 91,000 and Rs 1,14,000 respectively depending on the wages of the workmen.

MATERNITY BENEFITS

Maternity Benefit Act, 1961 regulates the employment of women in certain establishments for certain period before and after child birth and provides for maternity and other benefits. The Act applies to mines, factories, circus industry and plantations including any such establishments belonging to Government except the employees who are covered under the Employees State Insurance Act, 1948. It can be extended to other establishments by state governments. There is no wage limit for coverage under the Act.

EMPLOYEES STATE INSURANCE SCHEME

Employees State Insurance Act, 1948 marks the most important step in the provision of social security benefits. Till recently, it covered non-seasonal factories using power and employing 20 or more persons, but now it is being gradually extended by state governments to smaller factories, hotels, restaurants, shops, cinemas, etc., employing 20 or more persons. It covers employees drawing wages not exceeding Rs 1,600 per month.

The Act provides for medical care in kind and cash, benefits in the contingency of sickness, maternity, employment injury and pension for dependents on the death of the worker because of employment injury. Full medical care including hospitalisation is also being progressively made available to the members of the family of the insured person.

As on 31 December 1987, there were 100 ESI hospitals and 42 annexes with 23,551 beds and 1,249 dispensaries under the scheme. The number of employees covered was about 63.08 lakh.

EMPLOYEES PROVIDENT FUND

Retirement benefits in the form of provident fund, family pension and deposit linked insurance are available to the employees under the Employees Provident Fund and Miscellaneous Provisions Act, 1952. As on 31 December 1987, it covered 173 industries/classes of establishments employing 20 or more persons all over India except Jammu and Kashmir. The Act does not apply to establishments registered under the Cooperative Societies Act, 1912 or under any other law relating to cooperative societies employing less than 50 persons and working without the aid of power. The scheme is applicable to those drawing wages up to Rs 2,500 per month with effect from 1 September 1985.

The employees contribute 8.33 per cent of the basic wages and dearness allowances including cash value of food concessions and retaining allowances payable to the employees. The employers make a matching contribution. At the end of 31 December 1987 the number of subscribers under the scheme was 1.41 crore.

DEATH RELIEF

Death Relief Fund was set up under the Employees Provident Fund Scheme in January 1964, for affording financial assistance to the nominees or heirs of deceased members of unexempted establishments whose pay (including basic pay, DA, etc.) does not exceed Rs 1,000 per month at the time of death. The quantum of benefit is restricted to the amount by which amount payable on account of provident fund falls short of Rs 1,250.

EMPLOYEES DEPOSIT LINKED INSURANCE SCHEME

Another important social security measure, the Employees Deposit Linked Insurance Scheme, 1976 was introduced for the members of the Employees Provident Fund and the exempted Provident Funds with effect from 1 August 1976. On the death of the member, the person entitled to receive the provident fund accumulation would be paid an additional amount equal to the average balance in the provident fund account of the deceased during the preceding three years, if such an average balance was not below Rs 1,000 during the said period. The maximum amount of benefit payable under this scheme is Rs 10,000 and the employees do not have to make any contribution to it.

FAMILY PENSION

To provide long-term financial security to the families of industrial employees in the event of their premature death, the Employees Family Pension Scheme was introduced from 1 March 1971 by diverting a portion of the employers' and employees' contribution to the Employees Provident Funds with an additional contribution by the Government. The amount of family pension payable ranges from a minimum of Rs 225 to a maximum of Rs 750 per month depending on the period of membership of the fund, which as effective from 1 April 1988. In addition the family pensioners are entitled to assurance benefit of Rs 2,000.

GRATUITY SCHEME

Payment of Gratuity Act, 1972 is applicable to factories, mines, oil fields, plantations, ports, railways, motor transport undertakings, companies, shops and other establishments. The coverage under the Act is restricted to employees drawing wages not exceeding Rs 1,600 per month. The Act provides for payment of gratuity at the rate of 15 days' wages for each completed year of service, subject to a maximum of 20 months' wages. In the case of seasonal establishment, the gratuity is payable at the rate of seven days' wages for each season. The Act does not affect the right of an employee to receive better terms of gratuity under any award or agreement or contract with the employer.

WORKING CONDITIONS AND WELFARE

Working conditions in factories are regulated by the Factories Act, 1948, which prescribes a 48-hour week for adult workers and forbids the employment of children under 14 in any factory. Minimum standards of lighting, ventilation, safety, health and welfare services which the employers must provide in their factories, have also been laid down. Factories employing over 30 women workers are required to provide a creche for their children. Shelters, rest rooms and lunch rooms are to be provided by factories employing over 150 workers. Factories with more than 250 employees have to provide canteens for their workers. Factories employing 500 employees or more workers have to appoint welfare officers. A bill called Factories (Amendment) Bill, 1986 was introduced in the Parliament with a view to further amending the Factories Act, 1948 so as to make the safety provisions more stringent. Amenities have also been provided in mines and plantations covered by the Mines Act, 1952, the Plantations Labour Act, 1951, the *Beedi* and Cigar Workers (Conditions of Employment) Act, 1966, the Contract Labour (Regulation and Abolition) Act, 1970, the Motor Transport Workers Act, 1961, etc.

To provide housing, medical, recreational and other welfare facilities on a planned basis, statutory welfare funds have been created for the benefit of workers in coal, mica, iron ore, manganese ore, limestone, dolomite mines and in the beedi industry. The welfare facilities provided under these funds include provision of housing, hospitals and medical, educational and recreational facilities.

The finances for the funds are raised through the levy of a cess, an *ad valorem* cess as customs duty on mica exports, a cess as a duty on export of iron ore and manganese ore and duty of excise on internal consumption and a cess on the limestone and dolomite consumed by the iron ore and steel plants and cement and other factories. The welfare fund for beedi workers is being financed by levy of cess on manufactured beedies.

Acts under which funds have been established are: Iron Ore Mines and Manganese Ore Mines Labour Welfare Cess Act 1976; Iron Ore Mines, Manganese Ore Mines and Chrome Ore Mines Labour Welfare Fund Act, 1976; Limestone and Dolomite Mines Labour Welfare Fund Act, 1972; Coal Mines Labour Welfare Funds Act; Mica Mines Labour Welfare Fund Act, 1946, and *Beedi* Workers' Welfare Cess (Amendment) Act, 1981.

PLANTATION LABOUR

Plantation Labour Act, 1951 provides for the welfare of plantation labour and regulates the conditions of work in plantations. The Act is administered by the state governments. It was passed in 1951, but was brought into force from 1 April 1954. Even from this date only such sections of the Act were given effect which could be enforced without framing of rules. The concerned state governments published their rules under the Act from September 1955 to April 1959, on the lines of model rules recommended by the Ministry of Labour.

With a view to removing some difficulties that have been experienced in the working of the Plantation Labour Act, 1951 and for enlarging the scope of the Act, the Plantation Labour (Amendment) Act, 1981 was passed by Parliament and has been brought into force with effect from 26 January 1982.

This Act applies to the whole of India except Jammu and Kashmir and covers all tea, coffee, rubber, cinchona and cardamom plantations measuring five hectares or more and employing 15 or more workers. Workers drawing wages up to Rs 750 per month are covered under the Act. It also now provides for compulsory registration of plantations.

Under the amended Act, all plantation holders have to provide housing accommodation to their resident workers and their families and also to those residing outside who have put in six months of continuous service and who express a desire in writing to reside on the plantations. The plantations maintain hospitals and dispensaries for workers. Some of the plantations also run elementary schools for the education of the workers' children. Training in useful handicrafts, such as tailoring, knitting and basket-making and recreational facilities are provided in some of the tea estate centres with the help of the Tea Board.

WORKERS SAFETY

Factories Act, 1948 provides for safety, health and welfare of workers employed in factories. It also provides for the appointment of safety officers in factories wherein one thousand or more workers are employed and in factories engaged in operations involving risk of injury, poisoning or diseases as so notified by state governments. The Act and the rules framed thereunder are enforced by state governments through their factory inspectorates.

Dock Workers (Safety, Health and Welfare) Scheme, 1961, framed under the Dock Workers (Regulation of Employment) Act, 1948, provides for measures for ensuring the health and welfare of dock workers and safety measures for those who are not covered under the Indian Dock Labourers Regulations, 1948. The Indian Dock Labourers Act, 1934 takes care of workers engaged on board the ship and alongside the ship.

Dock Workers (Safety, Health and Welfare) Act, 1986 has been enacted by the Government incorporating the provisions of the above Acts and the same has come into force from April 1987.

Directorate General, Factory Advice Service and Labour Institute, Bombay, functions as an integral body to advise the Government, industry and other interests concerned with matters relating to safety, health and welfare of factory workers. It undertakes enforcement of laws on safety and health relating to dock workers.

The Government has drawn up a 'national programme for coordinated action plan for control of hazards and protection of occupational health and safety of workers in dangerous manufacturing processes'. This action plan lists out the responsibilities of the Government managements and workers' organisations in the field of safety and health in work environment, and includes 'model schemes for setting up full safety control system cell' in hazardous industries and 'safety and health accidents reduction action plan' (SAHARA).

An ILO Project for 'Establishment and Initial Operation of Major Accident Hazard Control Systems in the Country' has commenced operation from December 1986. The project which will last three years and one month provides for establishment of a major accident hazard control division in the Central Labour Institute, Bombay; training/fellowships for top administrators, chemical factory inspectors and officers of DGFASLI; provision of international experts on safety, etc. It is implemented by ILO with FRG assistance.

NATIONAL SAFETY COUNCIL

National Safety Council was set up in 1966 to promote safety consciousness among workers to prevent accidents, minimise dangers and mitigate human sufferings, arrange programmes, lectures and conferences on safety conducts, educational compaigns to arouse consciousness amongst employers and workers and collect educational and information data, etc. As on 31 March 1987, the Council's membership of 1,962 consisted of 1,658 corporate members, 183 individual members, 31 trade union members and 90 life members. The National Safety Day is celebrated on 4 March every year throughout the country to mark the foundation day of the National Safety Council.

NATIONAL SAFETY AWARDS

To give recognition to good safety performance on the part of industrial undertakings and to stimulate and maintain the interest of both the managements and the workers in accident prevention programmes, the Government instituted in 1965 the National Safety Awards. The award schemes were instituted for factories registered under the Factories Act, 1948, but from 1971, separate schemes for factories not covered under the Act and for ports have also been introduced. At present, ten schemes are in operation.

VISWAKARMA AWARDS

Shram Vir Awards were instituted in 1965 for workers of factories, mines, plantations and docks. These are given in recognition of meritorious performance which leads to high productivity or economy or efficiency. These awards have since been renamed as Viswakarma Awards.

PRIME MINISTER'S SHRAM AWARDS

In pursuance of the announcement made by the Prime Minister at Dhanbad on May Day 1985, the Government has introduced a scheme entitled 'Prime Minister's Shram Awards'. These awards are to be given to workmen in recognition of their outstanding contribution towards production and for showing exemplary zeal and enthusiasm in the discharge of their duties. The awards, in the order of precedence are: *Shram Ratna, Shram Bhushan, Shram Vir,* and *Shram Shri/Shram Devi.* The awards are announced on the eve of the Independence Day every year. The recognition consists of a *Sanad* and a cash award of Rs one lakh, Rs 50,000, Rs 30,000 and Rs 20,000 respectively.

SAFETY IN MINES

Under the Constitution, the safety, health and welfare of workers employed in mines are the concern of the Central government. The matter is regulated by the Mines Act, 1952. The Act applies to mines of all types including mines of atomic minerals and oil fields.

The Directorate General of Mines Safety has been entrusted with the functions of enforcing the provisions of the Mines Act, 1952 and the rules and regulations framed thereunder. The Directorate and the National Council for Safety in Mines continued their efforts to improve safety conditions in mines through publicity and propaganda, audio-visual aids and other means. Their prime concern has been to instil safety consciousness among the miners and also to make them actively participate in all types of safety activities. The officials of the National Council for Safety in Mines participated in course and seminars organised by mines managements and other organisations; conducted refresher courses; arranged exhibitions, and also participated in organising first-aid competitions.

NATIONAL SAFETY AWARDS (MINES)

National Safety Awards for mines were instituted in 1983. The scheme is designed to give recognition at the national level for outstanding safety performances at mines which come within the purview of the Mines Act, 1952. These awards are given every year.

CONFERENCE ON SAFETY IN MINES

Conferences on safety in mines are held periodically after a gap of two years. The first such conference was held in 1958 in Calcutta. The sixth conference on safety in mines was held in New Delhi on 13-14 January 1986. The conference was attended by representatives of Central and state governments, employers and workers' organisations, members of Parliament and professional institutions. It reviewed various aspects concerning safety in mines and discussed at length the measures to reduce accidents due to fall of roof and other reasons. It recommended additional measures that mines managements and workers have to take for the safe working of mines. The need for strengthening the inspection machinery also came up by way of recommendations.

EMPLOYMENT

Employment in the organised sector, *i.e.*, in all the public sector undertakings and non-agricultural establishments employing ten or more persons in the private sector increased from 250.56 lakh in March 1986 to 257.48 lakh (provisional) in March 1988, an increase of 1.4 per cent. The increase in the public sector employment during 1988 was 1.7 per cent.

The Seventh Plan document states that the Sixth Plan generated 356 lakh 'Standard Person Years' (work for 8 hours a day for 273 days in a year) of employment opportunities. It has also been estimated that the backlog of unemployment at the outset of the Seventh Plan was of the order of 92 lakh (for the age group 5-plus). The net addition to the labour force in this age group is expected to be 393.8 lakh and the additional employment generation to be of the order of 403.6 lakh 'Standard Person Years' during the Seventh Plan.

NATIONAL EMPLOYMENT SERVICE

National Employment Service (NES) consists of a network of 741 employment exchanges and 80 university employment information and guidance bureaux (UEIGBX). The exchanges assist all employment seekers, Group 'D' surplus employees of the Central government, including the special groups like the handicapped, ex-servicemen, scheduled castes and scheduled tribes, women, etc., through placement against jobs notified by employers. The NES also carries out other functions, such as vocational guidance and employment counselling, collection and dissemination of employment market information and conducts studies in the field of employment and occupational research, with a view to generating data for framing employment and manpower policies.

Under the Employment Exchanges (Compulsory Notification of Vacancies) Act, 1959, it is obligatory for all establishments in the public sector and such of those non-agricultural establishments in the private sector employing 25 or more workers, to notify their vacancies (with certain exemptions) to the employment exchanges and supply periodic information as prescribed in the Act and in the rules made thereunder.

Table 24.5 gives figures relating to the activities of the employment exchanges.

TABLE 24.5 PERFORMANCE OF EMPLOYMENT EXCHANGES

Year	Exchanges (excluding UEIGBX)	Registrations (Thousand)	Applicants placed in Employment (Thousand)	Applicants on the Live Register (End of the year) (Thousand)	Vacancies Notified (Thousand)
1956	143	1,670.0	189.9	758.5	296.6
1971	437	5,129.9	507.0	5,099.9	813.6
1976	517	5,619.4	496.8	9,784.3	815.6
1981	663	6,276.9	504.1	17,838.1	896.8
1982	692	5,862.9	473.4	19,753.0	819.9
1983	726	6,755.8	485.9	21,953.3	826.0
1984	745	6,219.0	407.3	23,546.8	707.8
1985	800	5,821.5	388.5	26,269.9	674.7
1986	821	5,535.4	351.4	30,131.2	623.4
1987	835	6,011.7	334.4	30,247.3	600.9
1988	840	5,963.2	328.5	30,050.2	543.3

ADMINISTRATION

The day-to-day administrative control over the employment exchanges was transferred to the state governments in November 1956. From April 1969, the states were also made financially responsible for the manpower and employment schemes. The role of the Central government is limited to policy-making, co-ordination of procedures and standards, and the development of various programmes on an all-India basis and training.

TRAINING AND RESEARCH

Central Institute for Research and Training in Employment Service (CIRTES) is functioning under the Directorate General of Employment and

Training (DGE & T) in the Ministry of Labour since 1964 and performs these functions: (i) assessment of training needs of personnel of NES; (ii) planning and conducting training courses for employment service personnel from states; (iii) conducting research into problems concerning the activities of the employment service, and (iv) compiling and publishing career literature and producing audio-visual aids for use in vocational guidance and career advising programmes.

The Institute also arranges tailor-made courses for trainee-officers deputed from different countries under various programmes.

VOCATIONAL GUIDANCE

Vocational guidance and employment counselling services are provided to the youth (applicants without any work experience) and adults (with specific work experience). Such units functioned in 357 employment exchanges in 1987. In addition, employment information and guidance bureaux functioned in 80 universities. These units assist the applicants and the youth in planning their career. A special scheme operates in 30 selected districts on a pilot basis to motivate and guide job seekers to take up self-employment.

EXCHANGES FOR PHYSICALLY HANDICAPPED

There are 23 special exchanges for the physically handicapped. They are functioning at Bombay, Delhi, Madras, Hyderabad, Calcutta, Ahmadabad, Bangalore, Ludhiana, Kanpur, Trivandrum, Jabalpur, Patna, Chandigarh, Jaipur, Bhubaneshwar, Shimla, Guwahati, Agartala, Rajkot, Surat, Vadodara, Imphal and Vishakhapatnam.

Seventeen vocational rehabilitation centres for the handicapped are functioning at Ahmadabad, Agartala, Bangalore, Bombay, Calcutta, Delhi, Hyderabad, Jabalpur, Kanpur, Ludhiana, Madras, Trivandrum, Jaipur, Vadodara, Patna, Guwahati and Bhubaneshwar. These centres provide a comprehensive package of rehabilitation services to the handicapped.

SC/ST JOB SEEKERS

Eighteen coaching-cum-guidance centres for scheduled castes and scheduled tribes, functioning at Delhi, Madras, Kanpur, Jaipur, Hyderabad, Trivandrum, Surat, Jabalpur, Ranchi, Calcutta, Aizawl, Bangalore, Hisar, Rourkela, Imphal, Nagpur, Mandi and Guwahati, provide confidence-building training to job seekers. One more centre is being set up at Jowai in Meghalaya.

TRAINING

In an endeavour to build up the career of young persons in their adolescence, the DGE&T has evolved various training programmes. These are formulated within the national framework as far as possible and also in collaboration with foreign countries.

CRAFTSMEN TRAINING

Industrial training institutes were set up all over the country to impart skills in 40 engineering and 26 non-engineering trades to youngmen and women in the age group of 15-25. At present, 1,887 such institutes with a total capacity of about 3.27 lakh are providing training to craftsmen in the country. The duration of the courses varies from six months to two years for engineering trades, but is one year for all non-engineering trades. The educational qualification for admission in most of the trades is 8th standard or two classes below matriculation or its equivalent and for some trades it is matriculation or its equivalent or 10th class under the 10 + 2 system. Besides these 66 trades, the state governments and union territories have introduced training in additional trades to meet the requirements of the new industries established in their areas.

With the objective to reorganise the craftsmen training programme on modular pattern as recommended by the Committee of Experts on Training, four model industrial training institutes, one each at Haldwani (UP), Calicut (Kerala), Choudwar (Orissa) and Jodhpur (Rajasthan), have been set up by the DGE & T which offer broad-based basic training followed by modular training.

CRAFT INSTRUCTORS TRAINING

Six Central Training Institutes were established at Bombay, Calcutta, Hyderabad, Kanpur, Ludhiana and Madras to train craft instructors required by the industrial training establishments. Out of these six institutes, except the one located at Madras, the other five have been upgraded as Advanced Training Institutes (ATI) during 1982. The six institutes with an admission capacity of 1,144 impart training in a number of trades. Facilities for the training of instructors have been provided in chemical group of trades and weaving trades at ATI, Bombay, in hotel catering group of trades at ATI, Hyderabad, in printing group of trades at ATI, Kanpur and in farm mechanic trades at ATI, Ludhiana. A model training institute is attached to each of these institutes which provides practical training for instructors.

ADVANCED VOCATIONAL TRAINING SYSTEM

Advanced Vocational Training System was launched in October 1977 for training of highly skilled workers and technicians in a variety of advanced and sophisticated skills not available from other vocational training programmes. The system was introduced in six advanced training institutes for instructors located at Bombay, Calcutta, Hyderabad, Kanpur, Ludhiana and CTI, Madras and 16 selected industrial training institutes under 15 state governments. These institutes were modernised to conduct various advanced courses under the scheme. It has trained over 89,000 persons till 1988.

An advanced training institute for electronics and process instrumentation was established at Hyderabad in 1974 to train highly skilled technicians in fields such as domestic/industrial/medical/ electronics and process instrumentation.

Another institute for electronics and process instrumentation is working since 1981 at Dehra Dun.

FOREMEN TRAINING/SUPERVISORY TRAINING

An institute to train foremen was established in Bangalore in 1971. It trains existing and potential shop foremen and supervisors in technical and managerial skills and workers from industry in advanced technical skills. To meet the increasing demand for trained foremen, the Government established the second Foremen Training Institute at Jamshedpur in 1982.

APPRENTICESHIP TRAINING SCHEME

Apprentices Act, 1961 makes it obligatory for employers in specified industries to engage apprentices. The training consists of basic training followed by on-the-job or shop floor training in accordance with standards prescribed by the Government in consulation with the Central Apprenticeship Council. So far, 218 categories of industries and 140 trades (6 trades have since been deleted) have been brought under the Act. The Apprenticeship (Amendment) Act, 1973 provides for reservation of seats for scheduled castes and scheduled tribes candidates as well as for improving the employment potential of engineering graduates and diploma holders.

The Apprentices Act has further been amended in 1986 to provide for a new category *viz.*, Technician (Vocational) apprentice for the benefit of 10+2 pass students from secondary education. These students will be undergoing one year on-the-job training in 20 different designated trades/subjects.

About 13,555 establishments are implementing the Act under which nearly 1.39 lakh trade apprentices were under training in various trades by the end of December 1988.

PART-TIME TRAINING TO INDUSTRIAL WORKERS

The scheme for imparting part-time training was introduced in the year 1958 with the objective to improve knowledge and skill of industrial workers who did not have the benefit of systematic training in the institutes. Under the scheme, industrial workers irrespective of their age but possessing two years workshop experience and sponsored by their respective employers, are eligible for admission. Courses of one/two years are conducted in the evenings in five ATIs at Calcutta, Bombay, Kanpur, Ludhiana, Hyderabad. and CTI, Madras under DGE&T, Ministry of Labour and in some industrial training institutes under the control of state governments/union territory administrations. After successful completion of courses, industrial workers are permitted to appear in the all India trade test conducted by the National Council for Vocational Training for award of national trade certificate as issued under the Craftsman Training Scheme.

VOCATIONAL TRAINING AND RESEARCH

Central Staff Training and Research Institute was set up in Calcutta in 1968, for training, research and development of training aids. The Institute conducts training programmes for officers and staff of the Central and state governments as well as from industry who control, regulate and direct training programmes. It also carries out research in vocational training aspects, prepares training aids and advises the industry on tackling industrial problems.

VOCATIONAL TRAINING FOR WOMEN

Central Training Institute for Women in New Delhi is a national vocational training institute for women. The Institute provides instructor training and advanced training in selected trades particularly suitable for women.

RURAL WORKERS

Various studies and Rural Labour Enquiries conducted from time to time, have revealed that the benefits of various statutory and non-statutory schemes have not reached the workers in rural areas, primarily due to lack of organisation among the rural workers. Realising the fact that the social gains of economic development can be secured by rural workers only if they are properly educated and organised, a plan scheme was formulated for "Organisation of Rural Workers" by appointing Honorary Rural Organisers (HROs) at block levels to organise the rural workers. The scheme is being implemented by state governments and each organiser is being paid an honorarium of Rs 200 per month and a fixed conveyance allowance of Rs 50 per month. The broad functions of the HROs are to motivate the rural workers to organise themselves and to give them knowledge about the laws enacted for their welfare.

To begin with, the scheme was introduced in 415 blocks. During 1983-84, the scheme was extended to 595 blocks (including 415 blocks in which the scheme was introduced earlier). During 1984-85, 1,000 posts of HROs were allocated to 14 state governments (Union Territory of Pondicherry included) to cover 1,000 blocks. Five hundred more posts of HROs were allocated to states/union territories in 1985-86. Thus, the total number of posts allocated now is 1,500 against which 870 HROs (provisional) have been appointed by the states.

RURAL LABOUR ENQUIRIES

The Government has so far conducted four all-India Rural Labour Enquiries. The first two enquiries known as the Agricultural Labour Enquiries, were conducted during 1950-51 and 1956-57. The other two enquiries, known as the Rural Labour Enquiries, were conducted in 1963-65 and 1974-75. The scope of the last two enquiries was extended to cover all labour households in rural areas. From the 32nd NSS Round (1977-78), the rural labour enquiry has been integrated with the general employment and unemployment survey of the National Sample Survey Organisation. With the integration of field work and processing of data, all subsequent enquiries would be conducted quinquennially to provide continuous data in the form of time series.

The main objectives of the Rural Labour Enquiries have been to prepare a weighing diagram for Consumer Price Index numbers for rural/agricultural workers and to build up reliable and up-to-date estimates of important socio-economic characteristics of agricultural/rural labour households as also to study their trends and variations during the *interregnum*. The data collected under these enquiries pertain to demographic structure, extent of employment and unemployment, earnings, household income, household consumption, expenditure, indebtedness, etc., with additional data on literacy, trade unionism, and awareness of the Minimum Wages Act (and the wages fixed thereunder) among the agricultural labourers during the latest enquiry.

EMIGRATION

The Emigration Act, 1983, which came into effect on 30 December 1983, regulates the emigration of citizens of India for employment in other countries. It governs the relationship between prospective employer and intending emigrant, as also between recruiting agents and emigrants. The employer can recruit Indians for employment either directly after obtaining permits from Indian missions or through recruiting agents registered with the Ministry of Labour. Recruiting agents numbering 1,351 have been registered as on 25 November 1988 with the Ministry of Labour after obtaining securities ranging from one lakh to five lakh rupees depending upon the number of persons proposed to be recruited. The persons who are acting as recruiting agents for deployment of doctors/nurses and who are not required to seek emigration clearance, will also have to obtain a certificate of registration from the Ministry of Labour.

Agents are not allowed to take more than Rs 2,000 from each emigrant as service charges. To provide further protection, eight state manpower corporations are in operation. They are in Andhra Pradesh, Kerala, Maharashtra, Orissa, Punjab, Tamil Nadu, Uttar Pradesh and in the union territory of Delhi.

The Act provides for legal and penal action against unscrupulous recruiting agents. Various offences including cheating of emigrants have been made cognizable under the Act. The Ministry of Labour has taken action against various agents for their defaults under the various provisions of the Act.

A system of public hearing has been introduced in the Office of the Protector General of Emigrants and seven offices of the Protector of Emigrants. The senior officers, including the Protector General of Emigrants, are available for the redressal of grievances of the public without prior appointment on three days of the week, *e.g.*, Monday, Wednesday and Friday in the office of Protector General of Emigrants and on Tuesday and Friday in the office of Protector of Emigrants.

25 Housing

IN fulfilling the basic needs of the population, housing ranks next only to food and clothing in importance. A certain minimum standard of housing is essential for healthy and civilised existence. The development of housing, therefore, must enjoy high priority in a poor society such as ours where housing amenities are far below the minimum standards that have been internationally accepted. Housing activity serves to fulfil many of the fundamental objectives of the Five Year Plans: providing shelter, raising the quality of life particularly of the poorer sections of the population; creating conditions which are conducive to the achievement of crucial objectives in terms of health, sanitation and education; creating substantial additional employment and dispersed economic activity, and improving urban-rural and inter-personal equity through narrowing down difference in standards of living.

NATIONAL HOUSING POLICY

Housing is a state subject, but the Central government is responsible for the formulation of policy with regard to common programmes and approaches in the context of more effective and efficient implementation of the social housing schemes. The national housing policy defines clearly the objectives, outlines a methodology to achieve these objectives and sets priorities in favour of the poor and disadvantaged sections of society. Attention is also focused on the need to bring about various legislative changes to accelerate the tempo of housing activity. The need to set up a national housing bank and to strengthen the institutional framework for the housing finance system has been identified as a major area of action. A suitable land development and distribution policy, the provision of fiscal incentives, active involvement of non-governmental organisations in the sector, manpower development, use of non-conventional energy resources, etc., have also been discussed. Promotion of low-cost and alternative building materials especially those which can replace or substantially reduce the use of materials like wood, cement, steel, etc., are proposed to be accorded a high priority. The draft policy document has been introduced in Parliament for discussion.

HOUSING REQUIREMENTS

It is estimated that for India an annual construction rate of 8-10 dwelling units per thousand population in the next 2-3 decades should be achieved in order to prevent further deterioration of housing situation. Based upon the census, the National Buildings Organisation (NBO) has assessed the housing inadequacy in the country during 1985 to the order of 247 lakh dwelling units (188 lakh in rural areas and 59 lakh in urban). But apart from the shortage of this magnitude, the increase in population between 1985-1990 would generate an additional requirement of housing units roughly to the extent of 162 lakh of which 124 lakh will be in rural areas and 38 lakh in urban areas. To radically reorient all policies relating to housing, the steps to be taken are: (i) provision of adequate finance for house construction; (ii) development of suitable land size in urban areas; (iii) provision of house-sites and construction assistance to landless workers in rural areas, and (iv) development and application of low-cost technology in house construction.

HOUSING SCHEMES UNDER PLANS

In the First Plan, the total investment under housing was Rs 1,150 crore which was 34 per cent of the total investment of the economy. Over the years, in quantitative terms, the public sector investment in housing has registered an increase by nearly 10 times since the inception of the Plan in 1950s. The outlay in housing in the Seventh Plan now stands at Rs 3,145 crore against the total investment of the economy of Rs 3,48,148 crore. This is 1.5 per cent higher than the percentage of total investment of the economy under the Sixth Plan.

SOCIAL HOUSING SCHEMES

Since independence, the Government has accepted that the state has to play an important role in housing provisions; consequently State's involvement has grown and an increasing amount of public expenditure has been spent on housing. The role of the Central government *vis-a-vis* the social housing schemes in operation in the country is confined to laying of broad financial assistance in the form of loans and subsidies to the state governments/union territory administrations and watching the progress of the schemes. The state governments/union territory administrations have been vested with full powers to formulate, sanction and execute the projects under the schemes and also to release financial assistance therefor to the concerned construction agencies. Since the beginning of the Fourth Plan, all Central assistance is given to the states in the form of block grants and block loans for all state sector schemes, including housing schemes, without being tied to any particular head of development or scheme. However, the Ministry of Urban Development monitors the progress of the schemes covered by 20-Point Programme.

During the Seventh Five Year Plan (up to 30 June 1988) 27.45 lakh rural landless families had been provided with house-sites and another 13.45 lakh families had been given construction assistance. Under the *Indira Awas Yojana,* 3.78 lakh dwelling units were provided to SC/ST and freed bonded labour in rural areas during the same period. The economically weaker sections and low income group people have been provided dwelling units to the extent of 4.99 lakh and 0.56 lakh respectively.

HOUSING FINANCE

Housing finance is the most crucial element in house construction and building activities. In the field of housing, the public sector has a marginal though promotional role to play. The bulk of the investment in housing is, however, expected to come from the private sector. A number of specialised agencies have come up in recent times in the country, yet the bulk of the finance for housing originates from a selected group of Central financial institutions comprising Life Insurance Corporation of India (LIC), General Insurance Corporation of India (GIC), Housing and Urban Development Corporation (HUDCO), Employees Provident Fund Organisation, etc. Funds are also provided and channelised through the state apex cooperative housing societies, state housing boards and housing and urban development authorities, nationalised commercial banks, etc.

NATIONAL HOUSING BANK

National Housing Bank, New Delhi with an initial authorised capital of Rs 100 crore has been established in 1988. It will be the principal agency to promote housing financial institutions by providing financial, managerial and technical support and will mobilise resources for the housing sector. To give a special thrust to the rural housing, the Reserve Bank of India will make a special additional contribution of Rs 100 crore to the Bank.

MORTGAGE INSURANCE SCHEME

With a view to providing necessary liquidity to the housing finance, a draft legislation on housing mortgage insurance scheme has been prepared. The bill will be piloted by the Ministry of Finance, in consultation with the Ministry of Law. The Ministry of Urban Development is also working on a scheme to introduce 'secondary mortgage market' in housing finance.

BUILDING CENTRES

The Ministry in consultation with HUDCO has formulated a national programme for setting up *nirman* or *nirmiti kendras* (building centres) for training of artisans in low-cost construction skills. It is proposed to set up 100 such centres in various parts of the country. Being training-cum-production centres, the nirmiti kendras are expected to be self-supporting. This programme has been launched on the success of such a centre in the Quilon district of Kerala.

Apart from providing gainful employment to artisans, youth and the home owners in upgrading their construction skills, it will give a new fillip to the construction of viable and affordable housing for the economically weaker sections and low income groups by ensuring steady supply of low-cost building materials developed and manufactured from locally available materials including agricultural and industrial wastes.

URBAN DEVELOPMENT

The Centrally-sponsored scheme for the integrated development of small and medium towns launched in 1979-80 has covered 235 towns. The Seventh Plan envisages to cover 107 more towns at an outlay of Rs 88 crore.

The scheme envisages Central loan assistance on a matching basis for components like land acquisition and development for residential schemes, traffic and transportation, markets and *mandis,* low-cost sanitation, etc., in accordance with the prescribed guidelines. Besides, the state governments are also required to take up components like slum improvement/upgradation, low-cost sanitation, medical facilities, health care, parks and playgrounds, etc., out of their own resources.

SOCIALISATION OF URBAN LAND

Urban Land (Ceiling and Regulation) Act, 1976 came into force on 17 February 1976. It provides for: (i) imposition of a ceiling on both ownership and possession of vacant land in urban agglomerations, the ceiling being on a graded basis according to the classification of the urban agglomeration; (ii) acquisition of the excess vacant land by the state governments with powers to dispose of it to sub-serve the common good; (iii) payment of an amount for the acquisition of the excess vacant land in cash and in bonds; (iv) exemptions in respect of certain specific categories of vacant lands, and (v) restricting the plinth area for the construction of future residential buildings. The Act provides for granting permission to hold land in excess of the ceiling limits for utilising them for the construction of dwelling units for the weaker sections of the society.

The Act applies to all the states and union territories except Jammu and Kashmir, Kerala, Nagaland and Sikkim, which have not adopted the Act so far and also excludes Tamil Nadu which had enacted its own law in 1978.

ENVIRONMENTAL IMPROVEMENT OF URBAN SLUMS

Basic amenities like drinking water, widening and paving of existing lanes and pathways, provision of community baths and latrines, storm-water drains, street lights, etc., in urban slums have been envisaged in the state sector scheme of environmental improvement of urban slums. The funds for the scheme are provided in the state annual plans and the state governments formulate and implement appropriate projects in accordance with their needs and priorities. During the Sixth Plan, about 94 lakh slum dwellers were covered under the scheme. The Seventh Plan envisages coverage of 90 lakh slum dwellers at an estimated cost of Rs 269.55 crore against which, in the first three years, 57.3 lakh slum dwellers have been benefitted.

WATER SUPPLY AND SANITATION

Water supply and sanitation is a state subject and the schemes relating to these are formulated and implemented by the respective state government/union territory administration. In the Seventh Plan (1985-90), a sum of Rs 2,988 crore has been provided for implementation of urban water, sewage and low-cost sanitation schemes. It is anticipated that by 1991, 90 per cent and 50 per cent of urban population will be covered with water supply and sewage sanitation facilities respectively.

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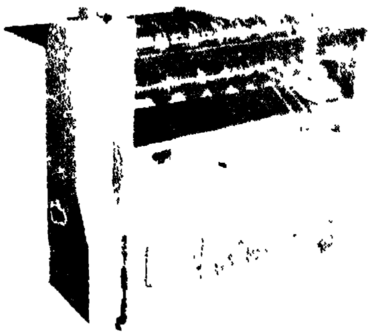

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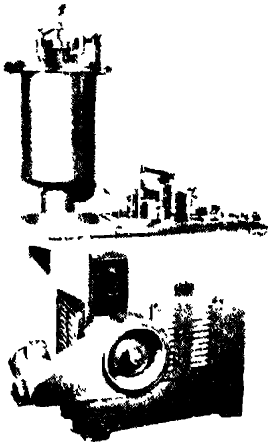

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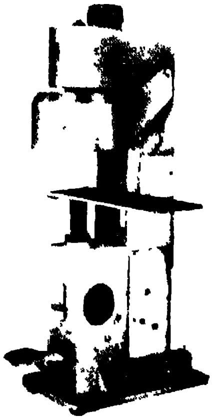

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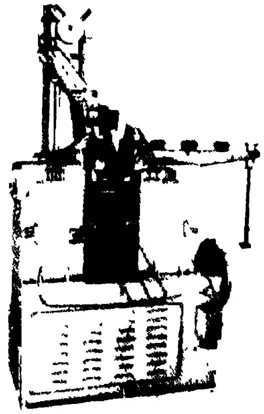

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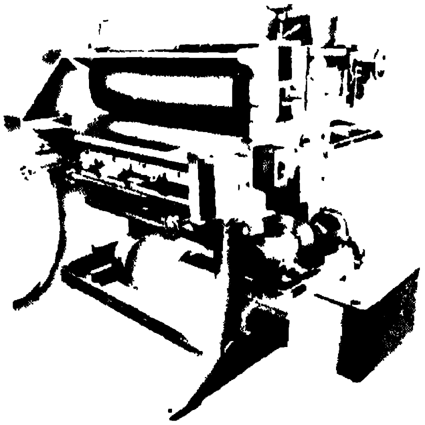

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A large number of training programmes have been taken up as a measure of human resource development in the area of water supply and sanitation planning design, operation, maintenance and management. The Government has introduced use of microcomputer for planning and designing of water supply distribution and sewage systems and is imparting training to the engineers of water supply and sanitation agencies. Financial assistance has been provided to 24 agencies for purchase of microcomputers.

In order to develop suitable Management Information System (MIS), a pilot project has been launched and a project team is working on the systems development.

CONSTRUCTION OF IMPROVED CREMATORIA BEDS

A new scheme for construction of improved crematoria beds has been approved for implementation during 1988-89 and 1989-90. A sum of Rs 25 lakh has been approved by the Planning Commission for being released as grant to the various state governments/union territories during 1988-89. The scheme aims at conserving precious/scarce fuelwood at present consumed in the cremation of dead bodies, by about 50 per cent. A beginning is being made during the current year by constructing about 625 beds in selected cities throughout the country at a cost of Rs 4,000 per bed (approximately).

NATIONAL CAPITAL REGION

A National Capital Region plan has been formulated in order to meet the growth and expansion needs of the capital. The plan covers integrated development of about 30,000 sq km in the union territory of Delhi and parts of Haryana, Rajasthan and Uttar Pradesh. A statutory body has been constituted through an enactment of the Parliament in 1985 and a draft regional plan has since been prepared for the development of the NCR.

CONSTRUCTION AGENCIES

NATIONAL BUILDINGS CONSTRUCTION CORPORATION

National Buildings Construction Corporation (NBCC) was incorporated in 1960. It is one of the premier engineering construction services organisation in the country and is actively engaged in the execution of sophisticated construction/turnkey contracts both overseas and at home. Its projects are put on network system. It has to its credit several important projects including major industrial structures, power stations, cement plants, fertiliser plants and refineries, tall RCC chimneys, bridges and flyovers, airports, luxury hotel complexes, water treatment plants and marine jobs, etc. It also provides consultancy services.

HOUSING AND URBAN DEVELOPMENT CORPORATION

Housing and Urban Development Corporation (HUDCO) was set up in 1970 as an apex organisation mainly to provide loan finance for housing and urban development programme in the country with a primary emphasis on the promotion of housing for the persons belonging to low income groups and economically weaker sections.

The major chunk of public sector investment in housing in the Central Plan is to be channelled through HUDCO. As in March 1988, HUDCO had sanctioned 5,333 schemes in 669 cities and towns covering almost all the states and involving loan assistance of about Rs 2,886 crore, of which it had disbursed about Rs 1,810 crore. These projects will privide about 28 lakh dwelling units and about 2.14 lakh developed plots and number of shops and commercial buildings. Of these, about 88 per cent of dwelling units and 79 per cent plots are for the benefit of the economically weaker sections and low income groups.

HINDUSTAN PREFAB LIMITED

Hindustan Prefab Limited (earlier known as Hindustan Housing Factory), New Delhi became a fully owned Government company in 1955. It is engaged in the production of pre-stressed concrete electric poles and railway sleepers. The Company also manufactures wooden joinery items and prefab/general construction works. The quality of wooden joinery items *viz.*, doors and window shutters manufactured by the Company, is the best in the country. The prefabricated components for industrial structures have not only effected saving in steel and resulted in quicker construction but also brought down the construction cost to some extent.

CENTRAL PUBLIC WORKS DEPARTMENT

Central Public Works Department (CPWD) is the official agency of the Government of India for construction and maintenance of all Central government projects except those of Railways, Communications, Atomic Energy, Defence Services and All India Radio. The spectrum of activities of CPWD is very wide, right from the selection of site, architectural, structural and landscape planning, design, execution including budgetting, monitoring, quality control of completion and post-completion maintenance. Contract management and arbitration are also done by CPWD.

CPWD handles a wide range of projects like housing and commercial complexes, educational institutions, hospitals, workshops, factories, hotels, foodgrain storage structures, airports, roads, bridges, etc. It also undertakes works of public undertakings and autonomous bodies as 'deposit works'.

CPWD has developed considerable expertise in the fields of civil, electrical, mechanical and airconditioning engineering, architecture, horticulture and landscaping. It has a Central Designs Organisation to undertake complex structural design work with the help of computers and to provide consultancy services. The Department has also introduced computerisation in other areas like architectural designs, project scheduling and monitoring, schedules of rates, pay roll and personnel management, etc. It has field units spread all over India to take up construction works even in the remote parts of the country. The Department also undertakes works abroad for Indian-aided projects and Indian embassies.

NATIONAL BUILDINGS ORGANISATION

National Buildings Organisation (NBO) established in 1954 promotes building research and its applications. Its 15 regional rural housing wings located in different parts of the country are engaged in research, training and extension programmes and also provide technical assistance and guidelines to the state governments for implementing rural housing projects for the rural poor, etc. They also take up low-cost demonstration houses in different climatic regions of the country. Such houses provide about 20 sq mt of plinth area at a cost less than Rs 6,000 depending on local situation. The NBO has also undertaken projects under the experimental housing scheme in different parts of the country with a view to promoting new construction techniques and materials

The Organisation is also functioning as United Nations Regional Housing Centre for Economic Social Commission for Asia and the Pacific (ESCAP). It is also a member of two international organisations *viz.*, International Council for Building Research Studies and Documentation, and International Rural Housing Association.

TOWN AND COUNTRY PLANNING ORGANISATION

Town and Country Planning Organisation (TCPO) is a technical advisory body on all matters pertaining to urban and regional development. It provides technical guidance and assistance to all state governments and union territory administrations. TCPO also undertakes project work for development on consultancy basis from public undertakings and local bodies.

26 Justice and Law

THE Constitution of the Republic of India guarantees, besides other rights, safeguards against arbitrary deprivation of life and personal liberty by providing in Article 21 that no person shall be deprived of his life or personal liberty except according to procedure established by law.

The adoption of a Republican Constitution by India in 1950 did not disturb the continuity of the existing laws and the unified structure of the courts. The unity and the uniformity of the judicial structure were preserved by placing such areas of law as criminal law and procedure, civil procedure, will, succession, contract including special form of contract, but not including contract relating to agricultural land, registration of deeds and documents, evidence, etc., in the Concurrent List.

SOURCES OF LAW

The main sources of law in India are the Constitution, statutes (legislation), customary law and case law. The statutes are enacted by Parliament, State Legislatures and Union Territory Legislatures. Then there is a vast body of laws known as subordinate legislation in the form of rules, regulations as well as bye-laws which are made by the Central and state governments and local authorities like municipal corporations, municipalities, *gram panchayats* and other local bodies. This subordinate legislation is made under the authority conferred or delegated either by Parliament or State or Union Territory Legislatures concerned. Judicial decisions of the superior courts like the Supreme Court and the High Courts are the important sources of law. The decisions of the Supreme Court are binding on all courts within the territory of India. As India is a land of diversities, local customs and conventions which are not against statute, morality, etc., are to a limited extent also recognised and taken into account by the courts while administering justice in certain spheres.

ENACTMENT OF LAWS

Parliament is competent to make laws on matters enumerated in the Union List. State Legislatures are competent to make laws on matters enumerated in the State List. Parliament alone has power to make laws on matters not included in State List or Concurrent List. On matters enumerated in the Concurrent List, laws can be made by both Parliament as well as State Legislatures. But in the event of repugnancy, the law made by Parliament shall prevail and the law made by State Legislature, to the extent of the repugnancy, be void unless the latter law having been reserved for the consideration of the President, has received his assent, and in that event it shall prevail in that State.

EXTENSION OF LAWS

Laws made by Parliament may extend throughout or to any part of the territory of India and those made by State Legislature may generally apply only within the territory of the State concerned. Hence, variations are likely to exist from State to State in the provisions of law relating to matters falling within State and Concurrent List.

JUDICIARY

One of the unique features of the Indian Constitution is that notwithstanding the adoption of a federal system and the existence of Central Acts and State Acts in their respective spheres, it has generally provided for a single integrated system of courts to administer both the Union and the State laws. At the apex of the entire judicial system exists the Supreme Court of India with a High Court of each state or group of states and under the High Courts, there is a hierarchy of subordinate courts.

There is generally separation of judiciary from executive. The *Panchayat* courts also function in some states under various names like *Nyaya Panchayat, Panchayat Adalat, Gram Kachhari,* etc., to decide civil and criminal disputes of petty and local nature. The different state laws provide for different kinds of jurisdiction of the courts.

Each state is divided into judicial districts presided over by a district and sessions judge, who is the principal civil court of original jurisdiction and can try all offences including those punishable with death. He is the highest judicial authority in a district. Below him, there are courts of civil jurisdiction, known in different states as *munsifs*, sub-judges, civil judges and the like. Similarly, the criminal judiciary consists of chief judicial magistrate and judicial magistrates of the first and the second class.

SUPREME COURT

Supreme Court of India consists of a Chief Justice and not more than 25 other judges appointed by the President. The judges hold office till the age of 65. For appointment as a judge of the Supreme Court, a person must be a citizen of India and must have been for atleast five years a judge of a High Court or of two or more such courts in succession; or an advocate of a High Court or of two or more such courts in succession for atleast 10 years or he must be in the opinion of the President, a distinguished jurist. Provision exists for the appointment of a judge of a High Court as an *ad hoc* judge of the Supreme Court and for retired judges of the Supreme Court or High Courts to sit and act as judges of that Court.

The Constitution seeks to ensure the independence of the Supreme Court judges in various ways. A judge of the Supreme Court can not be removed from office except by an order of the President passed after an address in each House of Parliament supported by a majority of the total membership of that House and by a majority of not less than two-third of the members present and voting, and is presented to the President in the same session for such removal, on the ground of proved misbehaviour or incapacity. A person who has been a judge of the Supreme Court is debarred from practising in any court of law or before any other authority in India.

The seat of the Supreme Court of India is in New Delhi. The members of the Court presently are: Chief Justice: ES Venkataramiah; Judges: Sabyasachi Mukharji, Ranganath Mishra, GJ Ona, BC Ray, MM Dutt, KN Singh, S Natarajan, MH Kania, KJ Shetty, Lalith Mohan Sharma, MN Venkatachaliah, S Ranganathan, ND Ojha, SR Pandian, TK Thomman, AM Ahmadi, KN Saikia and Kuldip Singh.

JURISDICTION OF THE SUPREME COURT

Supreme Court has original, appellate and advisory jurisdiction. Its exclusive original jurisdiction extends to any dispute between the Government of India and one or more states, or between the Government of India and any state or states on one side and one or more other states on the other, or between two or more states, if and in so far as the dispute involves any question (whether of law or of fact) on which the existence or extent of a legal right depends. In addition, Article 32 of the Constitution gives an extensive original jurisdiction to the Supreme Court in regard to the enforcement of Fundamental Rights. It is empowered to issue directions or orders or writs, including writs in the nature of *habeas corpus, mandamus, prohibition, quo warranto* and *certiorari* to enforce them.

Supreme Court has been conferred powers to direct transfer of any civil/criminal case from one state High Court to another state High Court or from a court subordinate to one state High Court to a court of competent jurisdiction subordinate to another state High Court. The Supreme Court, if satisfied, that cases involving the same or substantially the same questions of law are pending before it in one or more High Courts or before two or more High Courts and that such questions are substantial questions of general importance, may withdraw the case or cases pending before the High Court or High Courts and dispose of all the cases itself.

The appellate jurisdiction of the Supreme Court can be invoked by the certificate of the High Court concerned or by special leave granted by the Supreme Court in respect of any judgment, decree or final order of the High Court in cases both civil and criminal, involving substantial questions of law as to the interpretation of the Constitution. Appeals also lie to the Supreme Court in civil matters, if the High Court concerned certifies (a) that the case involves a substantial question of law of general importance and (b) that in the opinion of the High Court, the said question needs to be decided by the Supreme Court. In criminal cases, an appeal lies to the Supreme Court, if the High Court (a) has on appeal reversed an order of acquittal of an accused person and sentenced him to death or to imprisonment for life or for a period of not less than 10 years, or (b) has withdrawn for trial before itself any case from any court subordinate to its authority and has in such trial convicted the accused person and sentenced him to death or to imprisonment for life or for a period of not less than 10 years, or (c) certifies that the case is a fit one for appeal to the Supreme Court. Parliament is authorised to confer on the Supreme Court any further powers to entertain and hear appeals from any judgment, final order or sentence in a criminal proceeding of a High Court.

Supreme Court has also a very wide appellate jurisdiction over all courts and tribunals in India in as much as it may, in its discretion, grant special leave to appeal from any judgment, decree, determination, sentence or order in any cause or matter passed or made by any court or tribunal in the territory of India.

Supreme Court has a special advisory jurisdiction in matters which may specifically be referred to it by the President under Article 143 of the Constitution. There are provisions for reference to this Court under Article 317(1) of the Constitution, 257 of the Income Tax Act, 1961, Section 7(2) of the Monopolies and Restrictive Trade Practices Act, 1969, 130A of the Customs Act, 1962, Section 35H of the Central Excise and Salt Act, 1944 and Section 82C of the Gold (Control) Act, 1968.

Appeals also lie to the Supreme Court under the Representation of People Act, Monopolies and Restrictive Trade Practices Act, Advocates, Contempt of Courts Act, Customs Act, Central Excise and Salt Act, Terrorist Affected Areas (Special Courts) Act, 1984 and Terrorist and Disruptive Activities (Prevention) Act, 1985.

Election petitions under Part III of the Presidential and Vice-Presidential Elections Act, 1952 are also filed directly in the Supreme Court.

HIGH COURTS

High Court stands at the head of the state's judicial administration. There are 18 High Courts in the country, including two having jurisdiction over more than one state. Among the union territories, Delhi alone has a High Court of its own. Other six union territories come under the jurisdiction of different state High Courts. Each High Court consists of a Chief Justice and such other judges as the President may, from time to time, appoint. The Chief Justice of a High Court is appointed by the President in consultation with the Chief Justice of India and the Governor of the State. The procedure for appointing other judges is the same except that the Chief Justice of the High Court concerned is also consulted. They hold office until they attain the age of 62 and are removable in the same manner as a judge of the Supreme Court of India. To be eligible for appointment as a judge, one must be a citizen of India and have held a judicial office in India for 10 years or must have practised as an advocate of a High Court or two or more such courts in succession for a similar period.

Every High Court has the power to issue to any person or authority and government within its jurisdiction, direction, orders or writs (including writs which are in the nature of *habeas corpus, mandamus, prohibition, quo warranto and certiorari*) or any of them for the enforcement of any of the Fundamental Rights and for any other purpose.

This power may also be exercised by any High Court exercising jurisdiction in relation to the territories within which the cause of action, wholly or in part, arises for the exercise of such power, notwithstanding that the seat of such government or authority or the residence of such person is not within those territories.

Each High Court has powers of superintendence over all courts within its jurisdiction. They can call for returns from such courts, make and issue general rules and prescribe forms to regulate their practices and proceedings and determine the manner and form in which books, entries and accounts shall be kept. Table 26.1 gives the seat and territorial jurisdiction of High Courts.

TABLE 26.1 JURISDICTION AND SEAT OF HIGH COURTS

Name	Year of Establishment	Territorial Jurisdiction	Seat of Court
Allahabad	1866	Uttar Pradesh	Allahabad (Bench at Lucknow)
Andhra Pradesh	1954	Andhra Pradesh	Hyderabad
Bombay	1861	Maharashtra, Dadra and Nagar Haveli and Goa, Daman and Diu	Bombay (Benches at Nagpur, Panaji and Aurangabad)
Calcutta	1861	West Bengal and Andaman and Nicobar Islands	Calcutta (Circuit bench at Port Blair)
Delhi	1966	Delhi	Delhi
Guwahati	1972	Assam, Manipur, Mehgalaya, Nagaland, Tripura, Mizoram and Arunachal Pradesh	Guwahati (Circuit benches at Imphal, Agartala, Shillong and Kohima)
Gujarat	1960	Gujarat	Ahmadabad
Himachal Pradesh	1971	Himachal Pradesh	Shimla
Jammu and Kashmir	1928	Jammu and Kashmir	Srinagar and Jammu
Karnataka	1884	Karnataka	Bangalore
Kerala	1956	Kerala and Lakshadweep	Ernakulam
Madhya Pradesh	1956	Madhya Pradesh	Jabalpur (Benches at Gwalior and Indore)
Madras	1861	Tamil Nadu and Pondicherry	Madras
Orissa	1948	Orissa	Cuttack
Patna	1916	Bihar	Patna (Bench at Ranchi)
Punjab and Haryana	1947	Punjab, Haryana and Chandigarh	Chandigarh
Rajasthan	1949	Rajasthan	Jodhpur (Bench at Jaipur)
Sikkim	1975	Sikkim	Gangtok

ADMINISTRATIVE TRIBUNALS

In pursuance of the provisions of Article 323-A of the Constitution, the Administrative Tribunals Act, 1985 was enacted by Parliament. The Act empowers the Central government to establish Central Administrative Tribunal and State Administrative Tribunals to adjudicate disputes and complaints relating to service matters of Central government employees and concerned state government employees respectively.

The Central Administrative Tribunal was set up on 1 November 1985. There are at present 15 benches of the Tribunal. The territorial jurisdiction of each bench of the Central Administrative Tribunal is shown in table 26.2

TABLE 26.2 TERRITORIAL JURISDICTION OF BENCH OF CENTRAL ADMINISTRATIVE TRIBUNAL

	Bench	Jurisdiction of the Bench
1	Principal Bench (New Delhi)	Delhi
2	Ahmadabad	Gujarat
3	Allahabad	Uttar Pradesh
4	Bangalore	Karnataka
5	Calcutta	Sikkim, West Bengal and Andaman and Nicobar Islands
6	Chandigarh	Jammu and Kashmir, Haryana, Himachal Pradesh, Punjab and Chandigarh
7	Cuttack	Orissa
8	Ernakulam	Kerala and Lakshadweep
9.	Guwahati	Assam, Manipur, Meghalaya, Nagaland, Tripura, Arunachal Pradesh and Mizoram
10.	Hyderabad	Andhra Pradesh
11	Jabalpur	Madhya Pradesh
12.	Jodhpur	Rajasthan
13	Madras	Tamil Nadu and Pondicherry
14.	New Bombay	Maharashtra, Goa, Dadra and Nagar Haveli and Daman and Diu
15	Patna	Bihar

The provisions of the Act have been extended to cover the employees of various corporations/societies. These are: (i) Central Board of Trustees constituted under the Employees Provident Funds and Miscellaneous Provosions Act, 1952; (2) Employees State Insurance Corporation; (3) Central Board for Workers Education; (4) National Labour Institute; (5) National Council of Safety in Mines, Dhanbad; (6) Council of Scientific and Industrial Research, and (7) Central Social Welfare Board.

The Central Administrative Tribunal has all the jurisdiction, powers and authority of a Court (except the Supreme Court) in relation to recruitment and matters concerning recruitment to any All India Service or to any Civil Service of the Union or a Civil Post under the Union or to a post connected with Defence or in the Defence Services being in either case, a post filled by a civilian and of service matters concerning a member of any All India Service or a person appointed to any Civil Service of the Union or any post under the Union or civilian appointed to any Defence Service or a post connected with Defence. The State Tribunals have similar jurisdiction in respect of state employees.

FAMILY COURTS

In order to promote conciliation in and secure speedy settlement of disputes relating to marriage and family affairs, arrangement has been made to set up Family Courts under the Family Courts Act, 1984. These courts are to be set up in a city or a town with a population of more than 10 lakh or such other places as the state government may deem necessary.

At present five Family Courts are functioning at Jaipur, Lucknow, Kanpur Bangalore and Gorakhpur. Notifications have also been issued in Madhya Pradesh, Maharashtra, Tamil Nadu, Sikkim, Delhi, Pondicherry and Andaman and Nicobar Islands to set up Family Courts.

SUBORDINATE COURTS

Subject to minor variations, the structure and functions of the Subordinate Courts are more or less uniform throughout the country. Designations of courts connote their functions. These courts deal with all the disputes of a civil nature or criminal nature as per the powers conferred on the incumbent presiding over the court. These courts have been derived principally from important codes prescribing procedure, *i.e.*, the Code of Civil Procedure, 1908 and the Code of Criminal Procedure, 1973 and further strengthened by local statutes.

At the lowest level are the courts described as Munsif Magistrate or Civil Judge (JD) or Judicial Magistrate First Class (JMFC). In some states, Munsif is also described as District Munsif. Ordinarily such courts are set up at taluka/tehsil level with jurisdiction over one or more talukas/tehsils. Most of the disputes, subject to a ceiling on pecuniary limit, are brought to these courts for their resolution. In some states where work-load does not justify existence of two separate cadres, the Munsif is also invested with the power of JMFC. Members of this cadre, when posted in large urban areas, are assigned either exclusively civil or exclusively criminal work. When they are posted in metropolitan areas, they are described as Metropolitan Magistrates and Chief Judicial Magistrates.

The next set of courts are described as Courts of District and Sessions Judge which also include the courts of AdditionalJudge,Joint Judge or Assistant Judge. The Court of the District and Sessions Judge at the district level is the principal court of original jurisdiction and is presided over by an officer called the District and Sessions Judge. As a rule, same officer invested with power under both the statutes presides over the court and it is known as District and Sessions Court. Depending upon the work-load, a District Court may have jurisdiction over more than one district. In some states, there is a court called Court of Civil and Sessions Judge. These courts generally have unlimited pecuniary jurisdiction and depending upon the power conferred on the incumbent officer incharge of the court, it can handle criminal cases where maximum punishment would not exceed seven years. In some states, these courts with unlimited pecuniary jurisdiction are called Courts of Civil Judge (Senior Division) and in some states they are described as Courts of Subordinate Judge.

In addition, there are courts known as Small Causes Court. These are set up either under the Provincial Small Causes Act at District level or under the Presidency Town Small Causes Court Act in Presidency/Metropolitan Towns.

The Constitution lays down provision for the appointment of District Judge and recruitment of persons other than district judges to the judicial service. It vests the power to control the District Courts and courts subordinate thereto in the respective High Courts.

ATTORNEY GENERAL

Attorney General of India is appointed by the President and holds office during the pleasure of the President. He must be a person qualified to be appointed as a judge of the Supreme Court. It is the duty of the Attorney General of India to give advice to the Government of India upon such legal matters, and to perform such other duties of legal character, as may be referred or assigned to him by the President. In the performance of his duties, he has the right of audience in all courts in India as well as the right to take part in the proceedings of Parliament without the right to vote.

In the discharge of his functions, the Attorney General is assisted by a Solicitor General and two Additional Solicitors General.

ADVOCATE GENERAL

There is an Advocate General for each state, appointed by the Governor and he holds office during the pleasure of the Governor. He must be a person qualified to be appointed as a judge of a High Court. His duty is to give advice to the State government upon such legal matters, and to perform such other duties of a legal character, as may be referred or assigned to him by the Governor. The Advocate General has the right to speak and take part in the proceedings of the State Legislature without the right to vote.

LEGAL PROFESSION

In India, the law relating to the legal profession is governed by the Advocates Act, 1961, and the rules framed thereunder by the Bar Council of India. It is a self-contained code of law relating to legal practitioners and provides for the constitution of State Bar Councils and the Bar Council of India. Persons enrolled as advocates under the Advocates Act with one of the State Bar Councils are entitled to practise the profession of law throughout the country. An advocate on the roll of any State Bar Council may apply for transfer to the roll of any other State Bar Council in the prescribed manner. No person shall be enrolled as an advocate on the roll of more than one State Bar Council. The dual system of attorney and advocate, which was in existence in the High Courts of Bombay and Calcutta, had been abolished with effect from 15 October 1976. There are two classes of advocates—"senior advocates" and "other advocates". An advocate may, with his consent, be designated as senior advocate, if the Supreme Court or a High Court is of the opinion that by virtue of his ability, standing at the Bar or special knowledge or experience in law, he deserves such distinction.

Senior advocates shall, in the matter of their practice, be subject to such restrictions as Bar Council of India may, in the interest of the legal profession, prescribe. Some of the restrictions on a senior advocate in the matter of his practice are that he shall not appear without an Advocate-on-record in the Surpreme Court or without an Advocate in Part II of the State roll in any Court/Tribunal, etc. He shall not accept instruction to draft pleading or affidavit, advise on evidence or to do any drafting work of an analogous kind in any Court or Tribunal, etc., or undertake conveyancing work of any kind whatsoever. This, however, shall not extend to settling any such matter as aforesaid in consultation with an Advocate in Part II of the said rule. He shall not accept directly from a client any brief or instruction to appear in any Court or Tribunal, etc. He may in recognition of the services rendered by an Advocate in Part II of the State roll appearing in any matter, pay him the fee which he considers reasonable.

Certain standards of education, etc., have been prescribed for enrolment as advocates. There are certain rules, regulating the standards of professional conduct and etiquette, right of pre-audience, seniority, disqualification for enrolment, etc.

Every advocate shall bear in mind that any one genuinely in need of a lawyer is entitled to legal aid even though he can not pay for it fully or adequately, and within the limits of an advocate's economic condition, free legal assistance to the indigent and oppressed is one of the higher obligations an advocate owes to society.

Bar Councils have disciplinary jurisdiction over advocates on their rolls. This is subject to a right of appeal to the Bar Council of India and a further right of appeal to the Supreme Court of India.

The matter relating to provision of social security measures to advocates has been considered by a high-powered Committee under the chairmanship of Justice Bahrul Islam. Among other things, it has been recommended by that Committee for provision of financial assistance to junior advocates for a period of five years from the date of their enrolment subject to certain eligibility conditions and providing a terminal benefit on retirement from the profession/death/disability. It has also recommended for group insurance and certain other facilities for purchase of law books, furniture, etc., to the members. The report of the Committee is under consideration of the Government.

LAW COMMISSION

The need for periodical revision of the form and content of law has been recognised for a long time in all countries. Changing social and economic conditions as well as changed concepts of certain ethical issues necessitate a review of the existing laws from time to time.

The genesis of the Law Commission lies in acceptance by the Government of India of the principles contained in the non-official resolution moved in the Lok Sabha on 19 November 1954, to the effect. The Commission was not created on a permanent basis. The permanency of it as a body, was left to the suggestion of the Commission itself.

The first Law Commission was set up in 1955 and since then it is being reconstituted every three years. So far twelve commissions have been constituted. The twelfth Commission was constituted for a period of three years from 1 September 1988 to 31 August 1991 with Justice MP Thakkar as its Chairman. With the constitution of the Commission, its terms of reference are always continued along with. But sometimes the Government also refers to it important legal problems to recommend thereon. The Government, apart from the above, may also increase the terms of reference.

The terms of reference of the twelfth Law Commission are: (i) law and poverty: to examine the laws which affect the poor and carry out post-audit of socio-economic legislation, and to take all such measures as may be necessary to harness law and the legal process in the service of the poor; (ii) to keep under review the system of judicial administration to ensure that it is responsive to the reasonable demands of the times and in particular to secure elimination of delays, speedy clearance of arrears and reduction in costs so as to secure quick and economical disposal of cases without affecting the cardinal principle that decisions should be just and fair; (iii) simplification of procedure to reduce and eliminate technicalities and devices for delay so that it operates not as an end in itself, but as a means of achieving justice and improvement of standards of all concerned with the administration of justice; (iv) to examine the existing laws in the light of Directive Principles of State Policy and to suggest ways of improvement and reform and also to suggest such legislation as might be necessary to implement the Directive Principles and to attain the objectives set out in the Preamble to the Constitution, and (v) to revise the Central Acts of general importance so as to simplify them and to remove anomalies, ambiguities and inequities; to recommend to the Government measures for bringing the statute book up-to-date by repealing obsolete laws and enactments or parts thereof which have outlived their utility.

LEGAL AID

The fundamental entitlement of legal aid is a concomitant right that arises out of the consent of Article 14 of the Constitution which enjoins the State not to deny to any person equality before the law or equal protection of laws. Article 21 forbids the State to deprive any person of his life or personal liberty except according to procedure established by law. Article 39A further envisages that opportunities for securing justice are not denied to any citizen by reason of economic or other disabilities.

A high-powered Committee was constituted under the chairmanship of Justice PN Bhagwati, Judge of Supreme Court, in September 1980. The Committee was reconstituted in May 1987 with Justice RS Pathak, the then Chief Justice of India, as patron-in-chief and Justice RN Misra, Judge of Supreme Court as its executive chairman. The Committee has formulated a model scheme for adoption by states and union territories. According to the model scheme, every citizen whose annual income from all sources does not exceed Rs 6,000 is eligible for free legal aid. The limitation as to income is not applicable in case of disputes where one of the parties belongs to scheduled castes, scheduled tribes, *vimukta jatis*, nomadic tribes or is a woman or a child.

The Legal Aid and Advice Boards have been set up in accordance with the model scheme in most of the states. The Boards have set up legal aid committees at High Court and district levels and in most of the places at *taluka* levels also. The Supreme Court Legal Aid Committee has been set up for dispensing legal aid in cases coming before the Supreme Court of India.

LOK ADALAT

Lok Adalats which are voluntary agencies at present, are monitored and overseen by State Legal Aid and Advice Boards. It has proved to be a successful alternative forum for resolution of disputes through conciliatory methods. As on 1 August 1988, in 2,082 Lok Adalats held so far, over 13 lakh cases have been settled and in over 0.35 lakh motor accident claim cases, compensation exceeding Rs 76.84 crore has been paid.

The Legal Services Authority Act, 1987 (39 of 1987) has been enacted which will provide a statutory footing to the legal aid movement. Under the Act, there shall be legal service authorities at the Central, state and district level. These authorities will have their own funds. Further, the Lok Adalats which are at present informal agencies, will acquire statutory authority. Every award of the Lok Adalat shall be deemed to be a decree of a civil court or order of any other court or tribunal and shall be final and binding on all the parties to the dispute. It also provides that in respect of cases decided at a Lok Adalat, the court fee paid by the parties will be refunded.

ENFORCEMENT AGENCIES

POLICE

The police force in the country is enjoined with the responsibility of maintenance of pubic order and prevention and detection of crimes. Public order and police being State subjects under the Constitution, police in India is maintained and controlled by the states.

The head of police force in the state is the Director General of Police/Inspector General of Police. The state is divided into convenient territorial divisions called ranges and each police range is under the administrative control of a Deputy

Inspector General of Police. A number of districts constitute the range. The district police is further subdivided into police divisions, circles and police stations. Besides civil police, the states also maintain their own armed police and have separate intelligence branches, crime branches, etc. The police set-up in big cities like Delhi, Calcutta, Bombay, Madras, Bangalore, Hyderabad, Ahmadabad and Nagpur is directly under a Commissioner of Police who enjoys magisterial powers.

All senior police posts in various states are manned by Indian Police Service (IPS) cadres, recruitment to which is made on all-India basis. Recruitment, promotion and cadre control in respect of the lower posts from police constables up to Deputy Suprintendent of Police are done by the state governments themselves.

The Government maintains a number of Central forces, which are in the nature of other armed forces of the Union. Besides Central Bureau of Intelligence (IB) and Central Bureau of Investigation (CBI), a number of institutions for the training of police officers and for scientific or technical assistance in the investigation and detection of crimes, are maintained by the Government.

CENTRAL BUREAU OF INVESTIGATION

Central Bureau of Investigation was created in April 1963. Prior to that, the organisation was known as Special Police Establishment functioning under the Delhi Special Police Establishment Act, 1946. In 1963, after the creation of the Central Bureau of Investigation, the functions of this organisation were enlarged covering besides investigation, the role of National Central Bureau for India under the International Criminal Police Organisation (INTERPOL) and also the Central Forensic Science Laboratory.

Central Bureau of Investigation through its Special Police Establishment Division, is the principal investigation agency of the Central government and is concerned with the investigation of cases of misconduct by public servants in the employment of the Central government and its corporate undertakings, cases in which the interests of the Central government or any corporation or body set up and financed by the Central government are involved; cases relating to breach of Central Laws in the enforcement of which the Central government is interested; big cases of fraud, cheating and embezzlement and other cases when committed by organised gangs or professional criminals having inter-state or international ramification. The CBI derives its power to investigate offences mentioned above from the Delhi Special Police Establishment Act, 1946.

During 1987, the Central Bureau of Investigation took up 1,295 cases for investigation involving 1,026 officers of gazetted status, 674 other public servants and 995 private persons. As a result of investigations, 644 cases involving 307 public servants of gazetted status, 328 other public servants and 1,041 private persons were prosecuted in courts of law. In the trials which concluded, 56 officers of gazetted status, 102 other public servants and 158 private persons were convicted by courts.

CBI indexes criminals involved in international crimes and verifies fingerprints from various foreign national crime bureaux. INTERPOL notices are also circulated to various enforcement agencies in the country.

BORDER SECURITY FORCE

Border Security Force (BSF), raised in 1965, is charged with the task of maintaining permanent vigilance on India's international borders, especially along Pakistan and Bangladesh. Its statutory functions are: (1) to promote a sense of security among the people living in the border areas; (2) to prevent trans-border crimes, unauthorised entry into or exit from the territory of India, and (3) to prevent smuggling and any other illegal activity. The role of BSF has further increased in view of activity in the border states and smuggling of arms by terrorists. In addition, the Force during the period of war has a supplementary role with the Army and functions directly under the operational control of the Army. Being an armed force, BSF units are called upon to undertake various internal security duties and are also deployed to assist civil administration.

The Force headquarters, located in Delhi, is headed by a Director General. It maintains adequate liaison with other forces operating in border areas like customs, revenue intelligence and local police authorities. Maintenance of boundary pillars is an additional task which is undertaken in cooperation with the Survey of India. The Force has four major training institutions, namely, (1) BSF Academy at Tekanpur (Gwalior) which undertakes training of officers, subordinate officers and other ranks, both initial and advanced training, (2) Training Centre and School at Hazaribag which undertakes training in specialist weapons and specialises in jungle training, (3) Central School of Weapons and Tactics at Indore and (4) Signal Training School at New Delhi. The Force has also set up a factory at Tekanpur for manufacturing tear smoke shell grenades to meet the requirements of various police forces in the country. Its present annual production is 50,000 munitions. All the tear smoke munitions required in the country are indigenously met by this unit. It is the only factory of its type in Asia and there are only four to five other factories in the world which manufacture this ammunition.

In addition, the BSF has set up a number of workshops for repair of small arms which cater to the needs of state police organisations and some union territories' police for repair/maintenance of their weapons like pistols, rifles, carbines, etc.

HOME GUARDS

Home Guards is a voluntary force first raised in India in December 1946 to assist the police in controlling civil disturbances and communal riots. Subsequently, the concept of a voluntary citizens' force was adopted by several states. In the wake of Chinese aggression in 1962, the Centre advised states and union territories to merge their existing voluntary organisations into one uniform voluntary force known as Home Guards.

The role of Home Guards is to serve as an auxiliary to the police in maintenance of law and order and help in maintaining internal security; help the community in any kind of emergency such as an air raid, fire, cyclone, earthquake, epidemic and so on; help in maintenance of special service, promote communal harmony and assist the administration in protecting weaker sections of society; participate in socio-economic and welfare activities and perform civil defence duties.

Home Guards are of two types—rural and urban. In border states, Border Wing Home Guards battalions have also been raised. These battalions serve as an auxiliary to the security forces. The total authorised strength of Home Guards in the country is 5.16 lakh, against which the raised strength is 4.39 lakh. The organisation is now spread over all states/union territories except in Kerala, Nagaland, Arunachal Pradesh, Sikkim and Lakshadweep.

Home Guards are raised under the Home Guards Act of states/union territories. Home Guards are recruited from various cross sections of people such as doctors, engineers, lawyers, teachers, professionals, government servants, employees of public and private sectors, college and university students, agricultural and industrial workers, etc., who give their spare time to the organisation for betterment of the community. All citizens of India within the age group of 18-50 are eligible to become Home Guards. Normal tenure of membership in Home Guards is 3 to 5 years. Amenities and facilities given to Home Guards include free uniform and washing allowance, free board and lodging during training, cash awards and medals for gallantry and distinguished and meritorious service. A Home Guard whenever called up for duty/training is paid duty/training allowance at prescribed rates to meet out-of-pocket expenses. Members of Home Guards with three years service in the organisation and trained in basic and refresher courses are given preference for recruitment to such Group C and D posts in the Central government as well as in most of the state government services, where training received in Home Guards is an added advantage in performance of duties.

Home Guards are being increasingly used by the police in maintenance of law and order, prevention of crime, anti-dacoity measures, border patrolling, flood relief, prohibition, guarding vital plants, protection of forests, watch and ward duties, disaster relief, fire fighting, supervision of elections and social welfare activities. In the event of national emergency, civil defence work is entrusted to Home Guards.

The Ministry of Home Affairs formulates the policy in respect of roles, target, raising, training, equipping, financing, establishment and other important matters. The expenditure incurred by state governments on Home Guards is generally shared between the Central and state governments on 50 : 50 basis. During the year 1988-89, Rs 21 crore had been provided for reimbursement of expenditure to states on raising and training of Home Guards.

CENTRAL RESERVE POLICE FORCE

Central Reserve Police Force was raised in 1939 and it was known as the Crown Representative's Police. After independence, it was renamed as the Central Reserve Police. Later, an appellation *Force* was added to the name. It is headed by a Director General with headquarters in Delhi. The primary task of the Force is that of assisting the states in maintaining law and order throughout the country.

CENTRAL INDUSTRIAL SECURITY FORCE

Central Industrial Security Force was raised under an Act of Parliament in 1969 for better protection and security of industrial undertakings, owned by the Government. The CISF has been declared as an armed force of the Union under the CISF (Amendment) Act, 1983 with effect form 15 June 1983 and is headed by a Director General with headquarters in New Delhi. The present strength of CISF is 61,800. The Force has been deployed mostly in vital sectors such as steel and fertiliser plants, oil refineries, ports, space installations, atomic energy establishments, etc.

ASSAM RIFLES

Assam Rifles is the oldest para military force in the country. It has rendered outstanding service in the north-eastern region during the last 153 years. Besides carrying out its tasks relating to (a) security and vigilance of India's international borders in the sensitive parts of the north-eastern region, (b) conduct of counter-insurgency operations in the insurgency-prone areas of Arunachal Pradesh, Nagaland, Manipur and Mizoram and (c) assistance to the civil administration in the maintenance of law and order during situations beyond the control of the state police, in the north-eastern region in a competent manner, The Assam Rifles have also made a significant contribution in extending civil administration to the hitherto un-administered areas of the north-eastern region.

Assam Rifles have also taken a lead in the field of adventure. In April-May 1986, Assam Rifles launched a unique rafting expedition over the mighty Brahmaputra river from Indo-Tibet border to Indo-Bangladesh border covering a record length of 1,655 km in 32 days on a bamboo raft. In 1987 Assam Rifles launched another mountaineering expedition of high adventure and on 31 May 1987 it scaled the Kanchenjunga, the third highest mountain in the world without oxygen. This year, in commemoration of its 153rd anniversary, the Assam Rifles launched a 'walking and jogging' expedition from all the passes of north-eastern region to Kanyakumari covering a distance of 4,500 km in 110 days.

CIVIL DEFENCE

Civil Defence aims at saving life, maintaining continuity of production and minimising damage to property in the event of hostile attacks. It also maintains the morale of the people in disastrous situations.

As per the Government's policy, Civil Defence measures are confined to selected places and vital plants/installations depending upon their strategic and tactical importance. Civil Defence is organised primarily on voluntary basis except for a small permanent nucleus staff which is to be augmented during war/emergencies. The Civil Defence communication system aims at establishing an early warning system and implementing a network of communication channels in vulnerable zones.

The Ministry of Home Affairs shares the expenditure on the implementation of civil defence measures on authorised items by the states on a 50:50 basis except in north-eastern states and five northern districts of West Bengal where the Central government bears all the expenditure.

The present strength of Civil Defence volunteers is 5.22 lakh, of which 2.99 lakh volunteers have since been raised. 2.80 lakh of them were trained up to December 1987.

National Civil Defence College, Nagpur conducts various civil defence courses for instructors, staff officers, NCC officers and also for officers from private and public sector undertakings.

FIRE SERVICES

Fire Services is a part of the Director General, Civil Defence (DGCD) Unit of the Ministry of Home Affairs. A National Fire Service College exists in Nagpur. It conducts both professional and degree courses in fire services. A three year degree course in Fire Engineering has been started from December 1978. The college is affiliated to the Nagpur University. Overseas countries also send their candidates for training in the college. So far it has trained 9,289 candidates including 71 from overseas countries.

Fire Adviser and Deputy Fire Adviser visit various states and render necessary advice to them for improving their fire services.

For development of fire services in the states, the General Insurance Corporation of India was persuaded to advance long-term loans for a five year period commencing from 1980-81.

The Standing Fire Advisory Council with Director General, Civil Defence as Chairman, Fire Adviser as Member-Secretary and heads of Fire Services in the states/union territories, etc., as members, is the highest national body where policy matters concerning all aspects of fire services are formulated.

NATIONAL POLICE ACADEMY

Sardar Vallabhbhai Patel National Police Academy was established at Mount Abu in 1948 and was shifted to its present location in Hyderabad in 1975. As India's premier police training institution, the Academy conducts induction level and in-service training courses for the Indian Police Service officers as well as police officers from Asian and African countries.

The Academy is headed by a Director of the rank of Director General of Police, assisted by three Deputy Directors of the rank of DIG of Police. The faculty consists of 11 Assistant Directors of the rank of Superintendent of Police including a Forensic Scientist and a Judicial Officer. Besides, there is a Professor in Business Management, three Readers, one in Behavioural Science, one in Teaching Methodology and the other in Training Methodology. There are five instructors for training in Police Science and Law.

A high-level advisory board comprising top most police officers and eminent educationists as its members and headed by the Union Home Secretary, periodically reviews the syllabi and training methodology of the various courses conducted at the Academy. The training courses, which have been restructured since 1986, consist of: (1) Base Course for IPS Probationers of eleven and a half months duration split into two phases of 8 months and 3½ months with 8 months practical training in the State in between the two phases; (2) Junior Management Course for IPS officers with 6 to 10 years of service, for six weeks; (3) Senior Management Course for IPS officers with 11 to 16 years of service, for four weeks; (4) Top Management Course for IPS officers with 17 to 20 years of service, for two weeks, and (5) Training Seminar for IPS officers over 20 years of service, for one week.

The Academy also conducts specialised courses of short duration on anti-corruption and vigilance work, disciplinary proceedings, management of training, performance appraisal, etc., for police officers of various ranks. Some other activities of the Academy include organising seminars on topical problems concerning the police in India, the Sardar Vallabhbhai Patel Memorial lecture, the Prime Minister's Silver Cup Essay Competition and publishing a magazine bi-annually, apart from promoting study and research on police-related topics.

INSTITUTE OF CRIMINOLOGY AND FORENSIC SCIENCE

Institute of Criminology and Forensic Science was established in 1972 to undertake research and training in Criminology and Forensic Science. It organises in-service training programme for various functionaries of the Criminal Justice System as also for officer-trainees from other Government departments and public sector undertakings. This Institute conducts 19 types of courses which are:

Criminology: (i) Crime and Justice; (ii) Advanced Course in Criminology; (iii) Social Deviance and Marginal Crime; (iv) Management of Anti-social and Criminal Behaviour; (v) Juvenile Delinquency; (vi) Police Community Relations in the context of Crime Control, and (vii) Orientation Course in Research Methodology.

Forensic Science : (viii) Orientation Course in Criminology and Forensic Science; (ix)Orientation to Forensic Science and Medicine; (x)Orientation to Document Examination; (xi)Advanced Course in Criminalistics; (xii)Chromatography Techniques in Forensic Science; (xiii)Certificate Course in Forensic Chemistry including Toxicology; (xiv)Certificate Course in Police Photography; (xv)Certificate Course in Forensic Biology including Serology; (xvi) Diploma Course in Forensic

Serology; (xvii) Diploma Course in Forensic Ballistics, (xviii) Diploma Course in Document Examination, and (xix)Diploma Course in Forensic Toxicology.

Some of these are professional courses and some are orientation courses and the rest are of an interactional nature. Foreign trainees under the Colombo Plan also join some of the professional courses.

The Institute also takes up specific subjects for research on those problems which require investigation from both the angles of Criminology and Forensic Science. It is also recognised as a centre of research leading to PhD by several universities. On the recommendations of the Science Adivsory Committee of the Cabinet Expert group, the Institute has been recognised as a science and technology organisation.

PRISONS

The subject "Prisons, reformatories and other institutions of like nature", is included in the State List of the Seventh Schedule to the Consitution. The administration and management of prisons including the maintenance and upkeep of prisoners are regulated under the Prisons Act, 1894, the Prisoners Act, 1900, and the Transfer of Prisoners Act, 1950, as adopted by the states and amended from time to time. The administration of prisons is carried on in accordance with the rules framed under these Acts and incorporated in the prison manuals of the respective states.

There are different types of jails-central jails, district jails, sub-jails, open jails, institutions for young offenders and jails for women. The administrative set-up of jails in states is headed by Director General/Inspector General of Prisons.

The All India Committee on Jail Reforms, set up on 25 July 1980 under the chairmanship of Justice, AN Mulla, submitted its report in March 1983. The report contains a large number of recommendations on various aspects of prison administration. Some of these recommendations are required to be implemented by state governments and union territory administrations, while some others by the Union government. Implementing quite a large number of them involves substantial financial outlays. Based on the recommendations, certain areas were identified as essential to be taken on a priority basis and the financial requirement for implementing that was projected to the Eighth Finance Commission. The Commission has recommended certain outlays and it has been decided to release to various state governments, funds to the extent of Rs 137.56 crore over the four year period, that is 1985-89. These funds are proposed to be utilised for creating additional jail capacity for undertrials, young offenders, women prisoners, lunatic prisoners and for providing prison amenities, that is, water supply, sanitary latrines, electrification etc. The prison staff will also be provided with residential accommodation. Various other recommendations are being processed in consultation with state governments and the concerned union territory administrations.

To supplement the states, resources to take up various welfare schemes such as introduction of work programmes, vocational training, augmentation of medical facilities, etc., the Government has earmarked an amount of Rs 50 crore for the period 1987-90 to states and union territories. Funds are being allotted to states/union territories on matching basis for items not already covered under the 8th Finance Commission Award.

The All India Group on Prison Administration, Security and Discipline appointed by this Ministry has given its report on 31 July 1987. The report covers various aspects of Prison Administration on Security and Discipline. The recommendations have been forwarded to the states for taking necessary action.

PERSONAL LAW

In India, there are people of different religions and faiths. They are governed by different sets of personal laws in respect of matters relating to family affairs *i.e.*, marriage, divorce, succession, etc.

MARRIAGE

The Law relating to marriage has been codified as different Acts applicable to people of different religions. These are:

(1) Hindu Widows Remarriage Act, 1856;
(2) Converts' Marriage Dissolution Act, 1886;
(3) Indian Divorce Act, 1869;
(4) Indian Christian Marriage Act, 1872;
(5) Kazis Act, 1880;
(6) Anand Marriage Act, 1909;
(7) Child Marriage Restraint Act, 1929;
(8) Parsi Marriage and Divorce Act, 1936;
(9) Dissolution of Muslim Marriages Act, 1939;
(10) Special Marriage Act, 1954;
(11) Hindu Marriage Act, 1955;
(12) Foreign Marriage Act, 1969, and
(13) Muslim Women (Protection of Rights on Divorce) Act, 1986.

The Special Marriage Act, 1954 extends to the whole of India, except Jammu and Kashmir and also applies to the citizens of India domiciled in the territories to which the Act extends but who are in Jammu and Kashmir. Persons governed by this Act can specifically register the marriage under the said Act even though they are of different religious faiths. The Act also provides that the marriage celebrated under any other form can also be registered under the Special Marriage Act, if it satisfies the requirements of the Act.

The Hindu Marriage Act, 1955, which extends to the whole of India, except Jammu and Kashmir, applies also to Hindus domiciled in territories to which the Act extends and who are outside the said territories. It applies to Hindus of all denominations, including Buddhists, Sikhs, Jains and all those who do not profess to be Muslims or Christians or Parsi or Jews. However, the Act does not apply to the members of any scheduled tribes unless the Government otherwise directs. An attempt has been made to codify the customary law which is prevalent among Hindus by enacting the Hindu Marriage Act, 1955.

The provisions in regard to divorce are contained in Section 13 of the Hindu Marriage Act and Section 27 of the Special Marriage Act. The common ground on which divorce can be sought by a husband or a wife under these Acts fall under the broad heads: adultery, desertion, cruelty, unsoundness of mind, venereal disease, leprosy, mutual consent and being not heard of as alive for seven years.

As regards the Christian community, the provisions relating to marriage and divorce are contained in the Indian Christian Marriage Act, 1872 and the Indian Divorce Act, 1869. The provisions in regard to divorce applicable to Christian community are contained in Section 10 of the Indian Divorce Act. Under that section, a husband can seek a divorce on the ground that the wife has been guilty of adultery, but the wife can seek a divorce on the ground that the husband has become convert to another religion and has gone through a marriage with another woman or has been guilty of (a) incestuous adultery, (b) bigamy with adultery, (c) marriage with another woman with adultery, (d) rape, sodomy or bestiality, (e) adultery coupled with such cruelty as without adultery would have entitled her to a divorce, a *mensa ettoro* (a system of divorce created by Roman Church equivalent to judicial separation on the grounds of adultery, perverse practices, cruelty, heresy and apostasy) and (f) adultery coupled with desertion without reasonable excuse for two years or more.

As regards Muslims, the marriages are governed by the Mohammadan law prevalent in the country. As regards divorce, *i.e.*, *talaq*, a Muslim wife has a much restricted right to dissolve her marriage. Unwritten and traditional law tried to ameliorate her position by permitting her to seek dissolution under the following forms: (a) *Talaq-i-Tafwid*: This is a form of delegated divorce. According to this, the husband delegates his right of divorce in a marriage contract which may stipulate that, *inter alia*, on his taking another wife, the first wife has a right to divorce him, (b) *Khula*: This is a dissolution by an agreement between the parties to the marriage on the wife's giving some consideration to the husband for her release from the marriage tie. The terms are a matter of bargain and usually take the form of the wife giving up her *mehr* or portion thereof and (c) *Mubarat:* This is a divorce by mutual consent.

Further, by the Dissolution of Muslim Marriages Act, 1939, a Muslim wife has been given the right to dissolve the marriage on these grounds: (1) whereabouts of the husband have not been known for a period of four years, (2) husband is not maintaining her for a period of two years, (3) imprisonment of husband for a period of seven years or more, (4) failure on the part of the husband to perform his marital obligations, without a reasonable cause, for a period of three years, (5) impotency of husband, (6) insanity for a period of two years, (7) suffering from leprosy or virulent venereal disease, (8) the marriage took place before she attained the age of 15 and such marriage not consummated, and (9) cruelty.

The Parsi Marriage and Divorce Act, 1936 governs the matrimonial relations of the Parsis. The word Parsi is defined in the Act as Pars Zoroastrian. A Zoroastrian is a person who professes the Zoroastrian religion. The word Parsi has a racial significance. Every marriage as well as divorce under this Act is required to be registered in accordance with the procedure prescribed in the Act. However, failure to fulfil the requirements on that behalf does not make the marriage invalid. The Act provides for monogamy. By the Parsi Marriage and Divorce (Amendment) Act, 1988 (5 of 1988), the scope of some of the provisions of the Parsi Marriage and Divorce Act, 1936 have been enlarged so as to bring them on the lines of the Hindu Marriage Act, 1955.

As regards the matrimonial laws of Jews, there is no codified law in India. Even today, they are governed by their religious laws. The Jews regard marriage not as a civil contract, but as a relation between two persons involving very sacred duties. Marriage can be dissolved through the courts on grounds of adultery or cruelty. The marriages are monogamous.

As regards personal laws relating to minority communities, it has been the policy of the Government to encourage reforms therein only on the initiative of those communities.

CHILD MARRIAGE

The Child Marriage Restraint Act, 1929, as amended in 1978, now provides that the marriage age for male will be 21 and that for female 18. This amendment has been brought into force with effect from 1 October 1978.

ADOPTION

Although there is no general law of adoption, yet it is permitted by a statute amongst the Hindus and by custom amongst a few numerically insignificant categories of persons. Since adoption is the legal affiliation of a child, it forms the subject matter of personal law. Muslims, Christians and Parsis have no adoption laws and have to approach the court under the Guardians and Wards Act, 1890. Muslims, Christians and Parsis can take a child under the said Act only under foster care. Once a child under the foster care becomes major, he is free to break away all his connections. Besides, such a child does not have the legal right of inheritance.

Foreigners who want to adopt Indian children have to approach the court under the aforesaid Act. In case, the court has given permission for the child to be taken out of the country, adoption according to a foreign law (*i.e.*, law applicable to guardian), takes place outside the country.

The Hindu law relating to adoption has been amended and codified into the Hindu Adoptions and Maintenance Act, 1956, under which a male or female Hindu having legal capacity, can take a son or daughter in adoption

GUARDIANSHIP

In dealing with the question of guardianship of a minor child, as in other spheres of family law, there is no uniform law. Three distinct legal systems are prevalent that is to say, the Hindu law, the Muslim law and the Guardians and Wards Act, 1890.

A guardian may be a natural guardian, testamentary guardian or a guardian appointed by the court. In deciding the question of guardianship, two distinct things have to be taken into account— the person of the minor and his property. Often the same person is not entrusted with both.

The Hindu Minority and Guardianship Act, 1956 has codified laws of Hindus relating to minority and guardianship. As in the case of uncodified law, it has upheld the superior right of the father. It lays down that a child is a minor till the age of 18. The natural guardian for both boys and unmarried girls is first the father and after him the mother. The prior right of the mother is recognised only to the custody of children below five. In the case of illegitimate children, the mother has a better claim than the putative father. The Act makes no distinction between the person of the minor and his property and, therefore, guardianship implies control over both. The Act directs that in deciding the question of guardianship, the courts must take the welfare of the child as the paramount consideration.

Under the Muslim law the father enjoys a dominant position. It also makes a distinction between guardianship and custody. For guardianship, which has usually reference to the guardianship or property, according to *Sunnis*, the father is preferred and in his absence his executor. If no executor has been appointed by the father, the guardianship passes on to the paternal grandfather. Among the *Shias*, the difference is that the father is regarded as the sole guardian but after his death, it is the right of the grandfather to take over the responsibility and not that of the executor. Both the schools, however, agree that the father while alive is the sole guardian. The mother is not recognised as a natural guardian even after the death of the father.

As regards rights of the natural guardian, there is no doubt that father's right extends both to property and person. Even when the mother has the custody of the minor child, the father's general right of supervision and control remains. The father can, however, appoint the mother as a testamentary guardian. Thus, though the mother may not be recognised as a natural guardian, there is no objection to her being appointed under the father's will.

The Muslim law recognises that mother's right to the custody of minor children (*Hizanat*) is an absolute right. Even the father can not deprive her of it. Misconduct is the only condition which can deprive the mother of this right. As regards the age at which the right of the mother to custody terminates, the Shia school holds that the mother's right to *Hizanat* is only during the period of weaning which is over when the child has completed the age of two, whereas the *Hanafi* school extends the period till the minor son has reached the age of seven. In case of girls, the Shia law upholds the mother's right till the girl reaches the age of seven and the Hanafi school till she attains puberty.

The Guardian and Wards Act, 1890 applies to all communities. It clearly lays down that the father's right is primary and no other person can be appointed unless the father is found unfit. This Act also provides that the court must take into consideration the welfare of the child while appointing the guardian under the Act.

MAINTENANCE

The obligation of the husband to maintain the wife arises out of the status of the marriage. The right to maintenance forms a part of the personal law.

Under the Code of Criminal Procedure, 1973, the right of maintenance extends not only to wife and dependent children, but also to indigent parents and to the divorced wives. The claim of the wife, etc., however, depends on the husband having sufficient means. The claim of maintenance for all dependent persons is limited to Rs 500 per month. The inclusion of the right of maintenance under the Code of Criminal Procedure has the great advantage of making the remedy both speedy and cheap. However, divorced wives who have received money payable under the customary presonal law, are not entitled to claim maintenance under the Code of Criminal Procedure.

Under the Hindu law, the wife has an absolute right to claim maintenance from the husband. But she loses her right, if she deviates herself from the path of chastity. Her right to maintenance is codified in the Hindu Adoptions and Maintenance Act, 1956. In assessing the amount of maintenance, the court takes into account various factors like the position and status of the parties, the reasonable wants of the claimant and the obligations and liabilities of the husband. It also judges whether the wife is justified in living apart from the husband. The justifiable reasons are spelt out in the Act.

Maintenance *pendente lite* (pending the suit) and even the expenses of a matrimonial suit will be borne by either husband or wife if the other spouse has no independent income for his or her support. The same principle will also govern the payment of permanent maintenance.

Under the Muslim law, the Muslim Women (Protection of Rights on Divorce) Act, 1986 protects the rights of Muslim women who have been divorced by or have obtained divorce from their husbands and provides for matters connected therewith or incidental thereto.

The Act *inter alia* provides that a divorced Muslim woman shall be entitled to: (a) reasonable and fair provision and maintenance to be made and paid to her within the *iddat* period by her former husband; (b) where she herself maintains the children born to her before or after her divorce, a reasonable and fair provision and maintenance to be made and paid by her former husband for a period of two years from the respective dates of birth of such children; (c) an amount equal to the sum of mehr or dower agreed to be paid to her at the time of her marriage or at any time thereafter according to Muslim law, and (d) all the properties given to her before or at the time of marriage or after her marriage by her relatives or friends or by the husband or any relatives of the husband or his friends.

In addition, the Act also provides that where a divorced Muslim woman is unable to maintain herself after the period of iddat, the magistrate shall order directing such of her relatives as would be entitled to inherit her property on her death according to Muslim law to pay such reasonable and fair maintenance to her as he may determine fit and proper, having regard to the needs of the divorced Muslim woman, the standard of life enjoyed by her during her marriage and the means of such relatives and such maintenance shall be payable by such relatives in the proportion in which they would inherit her property and at such periods as he may specify in his order.

Where such divorced woman has children, the magistrate shall order only such children to pay maintenance to her, and in the event of any such children being unable to pay such maintenance, he shall order the parents of such divorced woman to pay maintenance to her.

In the absence of such relatives or where such relatives are not in a position to maintain her, the magistrate may direct the State Wakf Board established under Section 9 of the Wakf Act, 1954, functioning in the area in which the woman resides, to pay such maintenance as determined by him.

The Parsi Marriage and Divorce Act, 1936 recognises the right of the wife to maintenance both alimony *pendente lite* as well as permanent alimony. The maximum amount that can be decreed by the court as alimony during the time a matrimonial suit is pending in court, is one-fifth of the husband's net income. In fixing the quantum as permanent maintenance, the court will determine what is just, bearing in mind the ability of the husband to pay, the wife's own assets and the conduct of the parties. The order will remain in force as long as the wife remains chaste and unmarried.

The Indian Divorce Act, 1869 governs the maintenance rights of a Christian wife. The provisions are the same as those under the Parsi law and the same considerations are applied in granting maintenance, both alimony *pendente lite* as well as permanent maintenance.

SUCCESSION

In 1925, the Indian Succession Act was enacted. The object of the Act was to consolidate the large number of laws which were in existence at that time. The laws governing succession to Muslims and Hindus were excluded from the purview of the Act. While consolidating the laws in respect of succession, two schemes, one relating to succession to the property of persons like Indian Christians, Jews and persons married under the Special Marriage Act, 1955, and the other relating to succession rights of Parsis, were adopted.

In the first scheme, for persons other than Parsis, when a person dies intestate leaving a widow and lineal descendants, she would be entitled to a fixed share of one-third of the property and the lineal descendants shall be entitled to the remaining two-thirds. This law was amended subsequently with the object of improving the rights of the widow and it was provided that where the intestate dies leaving a widow and no lineal descendant and the net value of the estate does not exceed Rs 5,000, she would be entitled to the whole of his property. Where the net value of the estate exceeds Rs 5,000, she is entitled to a charge for the sum of Rs 5,000 with interest at four per cent till payment and in the residue, she is entitled to her share. The Act imposes no restriction on the power of a person to will away his property.

Under the second scheme, the Act provides for Parsi intestate succession. A feature of the rule governing the Parsi intestate is that like the Hindu law and unlike the Muslim law, there are separate rules for the devolution of the property of male and female Parsi intestates. For example, if a male Parsi dies leaving a widow and children, the property will be divided so that the share of each son and widow will be double the share of each daughter. Further, when a male Parsi dies leaving one or both parents in addition to a widow and children, the property will be so divided that the father shall receive a share equal to half the share of a son and the mother will receive a share equal to half the share of a daughter.

The remarkable features of the Hindu Succession Act, 1956 are the recognition of the right of women to inherit the property of an intestate equally with men and the abolition of the life estate of female heirs.

A vast majority of Muslims in India follow the Hanafi doctrines of Sunni law and the courts presumed that Muslims are governed by the Hanafi law, unless it is established to the contrary. Though there are many features in common between Shia and Sunni schools, there are differences in some respects. The Sunni law regards the Koranic verses of inheritance as an addendum to the pre-Islamic customary law and preserves the superior position of male agnates.

Unlike Hindu and Christian law, Muslim law restricts a person's right of testation. A Muslim can bequeath only one-third of his estate. A bequest to a stranger is valid without the consent of heirs if it does not exceed a third of the estate, but a bequest to an heir without the consent of other heirs is invalid. The consent of heirs to a bequest must be secured after the succession has opened and any consent given to a bequest during the life time of the testator can be retracted after his death. The Shia law allows the Muslims the freedom of bequest within the disposable third.

LAWS OF PARLIAMENT

During 1987 and 1988, 132 bills (including five Constitutional amendments) were enacted: The amendments of the Constitution so far made, with their scope and purpose appear in Chapter 31—General Information. A list of the bills is given in the Appendices. The scope and purpose of some of the laws enacted during 1987 and 1988 are:

1987

(1) *The Cotton, Copra and Vegetable Oils Cess (Abolition) Act, 1987 (4 of 1987):* The Act seeks to amend the Produce Cess Act, 1966 and the Coconut Development Board Act, 1979 and to repeal the Copra Cess Act, 1979 and the

Vegetable Oils Cess Act, 1983 mainly for the purpose of abolishing cess on cotton, copra and vegetable oils.

(2) *The Jute Packaging Materials (Compulsory Use in Packing Commodities) Act, 1987 (10 of 1987):* The jute industry has been passing through a severe crisis in recent years due to stiff competition from synthetic substitutes for jute packaging materials. To save the jute industry from such competition, the Act provides for the compulsory use of jute packaging material in the supply and distribution of certain commodities and for the protection or interest of persons engaged in raw jute production and jute industry.

(3) *The Mental Health Act, 1987 (14 of 1987):* The experience of the working of the Indian Lunacy Act, 1912 revealed that it has become outmoded as it is now realised that no stigma should be attached to a person afflicted with mental illness and more so when it is curable. With the rapid advance in medical science, it was felt necessary to have fresh legislation with provisions for treatment of mentally ill persons in accordance with the new approach. The main object of the Act is to regulate admission on voluntary basis to psychiatric hospitals or psychiatric nursing homes, to protect society from the presence of mentally ill persons, who have become or might become a danger or nuisance to others, to protect citizens from being detained in psychiatric hospitals or nursing homes without sufficient cause, to regulate responsibility for maintenance charges of mentally ill persons, establishing guardianship or custody of mentally ill persons who are incapable of managing their own affairs, provisions for establishing Central and state authorities for mental health services, lincensing and control of psychiatric hospitals and nursing homes and to provide legal aid to mentally ill persons at State expense in certain cases.

(4) *The Governors (Emoluments, Allowances and Privileges) Amendment Act, 1987* (17 *of* 1987): The Act seeks to increase the emoluments payable to the Governors from Rs 5,500 per mensum to Rs 11,000 per mensum retrospectively from 1 April 1986.

(5) *The Goa, Daman and Diu Reorganisation Act, 1987* (18 *of* 1987): The Act seeks to form a new State of Goa comprising the Goa District of the erstwhile Union Territory and the new Union Territory of Daman and Diu comprising the Daman and Diu Districts of the said Union Territory.

(6) *The State of Arunachal Pradesh (Amendment) Act,* 1987 (19 *of* 1987): In the Legislative Assembly of the erstwhile Union Territory of Arunachal Pradesh, there were thirty elected members and three nominated members. Section 11 of the State of Arunachal Pradesh Act, 1986 provides that on and from the appointed day and until the Legislative Assembly of the State has been duly constituted and summoned to meet for the first session, there shall be a provisional Legislative Assembly consisting of members elected by the territorial constituencies of the Legislative Assembly of the existing Union Territory of Arunachal Pradesh. The amendment provides for the continuance of the three nominated members of the Legislative Assembly of the existing Union Territory of Arunachal Pradesh as members in the provisional State Legislative Assembly

on and from the appointed day. A clarificatory amendment has also been made in that section to provide that the said provisional Assembly shall be deemed to be the Legislative Assembly of the State duly constituted and the members of the said provisional Assembly shall be deemed to be members of the Legislative Assembly of the State, duly elected under the Constitution.

(7) *The Payment of Gratuity (Amendment) Act, 1987 (22 of 1987):* Primarily the amendments made to the Payment of Gratuity Act relate to persons drawing wages up to Rs 2,500 per month, cover matters like depositing the amount of gratuity payable to a minor with the controling authority who shall invest it in a bank or a financial institution for the benefit of minor, replacing the existing ceiling of 20 months' wages by a monetary ceiling of Rs 50,000 compulsory insurance of employers' liability to pay gratuity or in the alternative for the setting up of a gratuity fund under the provisions of the Act in relation to establishments employing five hundred or more employees, provision for payment of simple interest at a specified rate, if the amount of gratuity is not paid within thirty days from the date it becomes payable and to make the penalties provided under the Act more stringent.

(8) *The Essential Commodities (Special Provisions) Continuance Act,* 1987 *(25 of* 1987): The provisions of the Essential Commodities (Special Provisions) Act 1981 (18 of 1981) were brought into force on 1 September 1982 to deal effectively with persons indulging in anti-social activities like hoarding and black marketing. The provisions of the said Act would have ceased to have effect on the expiry of five years from the above date. Since the reasons for which the special provisions were enacted and brought into force still continue to exist, the question of continuing the special provisions was considered in consultation with all states and union territories who were of the view that the provisions proved very useful and effective and should continue to be in force. The present amended Act continues the said provisions for a further period of five years from 1 September 1987.

(9) *The National Security (Amendment) Act,* 1987 (27 *of* 1987): The Act replaces the National Security (Amendment) Ordinance, 1987 promulgated by the President on 9 June 1987. The Act *inter alia* makes provision to increase from 10 days to 13 days the maximum period within which grounds of detention may, in exceptional circumstances be communicated to the detenu and to increase from 15 days to 20 days up to which the orders made by the officers mentioned in Section 3(1) of the Act shall remain in force without approval of the State government. Provision has also been made for the detention of persons in certain cases without obtaining the opinion of the Advisory Board for a period of more than three months but not exceeding six months from the date of their detention.

(10) *The Terrorist and Disruptive Activities (Prevention) Act,* 1987 (28 *of* 1987): The Terrorist and Disruptive Activities (Prevention) Act, 1985 was enacted in May 1985, in background of escalation of terrorist activities in many parts of the country at that time. It was expected then that it would be possible to

control the menace within a period of two years and, therefore, the life of the said Act was restricted to a period of two years from the date of its commencement. However, it was subsequently realised that on account of various factors, what were stray incidents in the beginning have now become a continuing menace specially in a State like Punjab. On the basis of experience, it was felt that in order to combat and cope with terrorist and disruptive activities effectively, it is not only necessary to continue the said law, but also to strengthen it further. The aforesaid Act of 1985 was due to expire on 23 May 1987. Since both Houses of Parliament were not in session and it was necessary to take immediate action, the President promulgated the Terrorist and Disruptive Activities (Prevention) Ordinance, 1987 (2 of 1987) on 23 May 1987, which came into force from 24 May 1987.

The Ordinance included all the provisions of the Act of 1985 except the following main changes, namely: (a) punishments for terrorist acts and disruptive activities were made more deterrent; (b) Central government has also been empowered to constitute Designated Courts; (c) the exhaustive enumeration of rule making powers, as contained in Section 5 of the 1985 Act, had been dispensed with and the Central government had been given power to make rules for carrying out the provisions of the Ordinance.

(11) *The Expenditure Tax Act*, 1987 (35 *of* 1987): The Act imposes a tax on expenditure incurred in hotels where the room charges for any unit of residential accommodation are four hundred rupees or more per day per individual. This tax will be levied at the rate of ten per cent of the expenditure incurred in connection with provision of any accommodation, food, drinks and certain other categories of services. This tax will not apply to expenditure incurred in foreign exchange or in the case of a person enjoying diplomatic privileges.

(12) *The National Dairy Development Board Act*, 1987 (37 *of* 1987): The National Dairy Development Board (NDDB) was set up in 1965 by the Government of India as a registered society with the primary obejctive for providing technical services to implementing agencies in building up their dairy projects on cooperative lines on the pattern of the Kaira District Cooperative Milk Producers' Union Limited, Anand popularly known as the 'Anand Pattern'. The National Dairy Development Board (NDDB) has since been progressively playing a wider role together with the Indian Dairy Corporation which is a company formed in 1970 to give supportive assistance in the implementation of the Operation Flood Programme. The Act declares the National Dairy Development Board as an institution of national importance and incorporates it as a statutory body. The Act also provides for better administration of the body corporate including the constitution of certain funds, provision for accounts, audit, etc.

(13) *The Legal Services Authorities Act*, 1987 (39 *of* 1987): Article 39A of the Constitution provides that the State shall secure that the operation of the legal system promotes justice, on the basis of equal opportunity, and shall, in particular, provide for legal aid, by suitable legislation or schemes or in any other

way, to ensure that opportunities for securing justice are not denied to any citizen by reason of economic or other disabilities. The Act provides for the constitution of statutory legal service authorities and payment to such authorities by means of grants from the Central government and state governments. The Act also confers on the institution of Lok Adalat at present functioning as a voluntary and conciliatory agency, statutory backing for the awards given by them.

(14) *The Representation of the People (Third Amendment) Act,* 1987 (40 *of* 1987): The Constitution (Fifty-Seventh Amendment) Act, 1987 inserted a new clause 3A in article 332 of the Constitution to provide for determination of number of seats for Scheduled Tribes in the Legislative Assemblies of the States of Nagaland, Mizoram, Maghalaya and Arunachal Pradesh, with reference to actual number of seats held by the Scheduled Tribes in the existing Legislative Assemblies of those States on the date of commencement of the said Constitution Amendment Act. The Representation of the People (Second Amendment) Act, 1987, was a sequel to this Constitution Amendment and that Act inserted a new Section 9A in the Representation of the People Act, 1950 to empower the Election Commission to determine the seats to be reserved for the Scheduled Tribes in the Legislative Assemblies of these States on the basis of the said Constitution Amendment. This device of determining reserved seats with reference to factual position on a future date, as contemplated by the said Constitution Amendment Act read with the Representation of the People (Second Amendment) Act, 1987 did not provide for the possibility of changes occurring in the position of the said Legislative Assemblies by reasons of vacancies on account of death, resignation, disqualification or otherwise. To overcome this difficulty, it was decided to further amend the Representation of the People Act, 1950 to specifically indicate therein the number of seats that would be reserved for Scheduled Tribes in those Legislative Assemblies. It has been specified that 59 of the 60 seats in the Nagaland Legislative Assembly, 55 of the 60 seats in the Meghalaya Legislative Assembly, 39 of the 40 seats in the Mizoram Legislative Assembly, and 39 of the 40 seats in the Arunachal Pradesh Legislative Assembly, would be reserved for the Scheduled Tribes in the general elections of those Assemblies which may be held in future.

(15) *The Constitution (Scheduled Tribes) Order (Amendment) Act,* 1987 (43 *of* 1987): The Act replaces the Ordinance on the subject promulgated by the President on 19 September 1987 for inclusion of the tribal communities of Boro Kacharis, Koch and Raba, Rava in the list of Scheduled Tribes of the State of Meghalaya.

(16) *Finance (Amendment) Act,* 1987 (46 *of* 1987): The Act primarily replaces the Ordinance promulgated by the President on the subject on 19 September 1987 which provided that every person having a total income exceeding fifty thousand rupees, who is liable to pay advance tax or whose income is chargeable to tax under the head "Salaries", the amount of income tax computed in accordance with the provisions of Part III of the First Schedule, shall be increased by a surcharge for purposes of the Union calculated at the rate

of five per cent of such income tax. The Ordinance also provided that in respect of instalments of advance tax which were paid or payable on 15 June 1987 and 15 September 1987, the surcharge for purposes of the Union was to be paid on or before 30 September 1987. The Act seeks not to levy surcharge on income of non-residents and foreign companies. The Act also provides that surcharge shall be payable on the amount of tax deducted at source from payments like dividends, lotteries, etc., and on the amount of income tax on profits and gains of life insurance business.

(17) *The Air (Prevention and Control of Pollution) Amendment Act,* 1987 (47 *of* 1987): The Air (Prevention and Control of Pollution) Act, 1981 was enacted under Article 253 of the Constitution to implement the decisions taken at the United Nations Conference on Human Environment held at Stockholm in June 1972 in which India participated. The said Act is implemented by the Central and state governments and the Central and state boards. Over the past few years, the implementing agencies have experienced some administrative and practical difficulties in effectively implementing the provisions of this Act and have brought these to the notice of Government. The ways and means to remove these difficulties have been thoroughly examined in consultation with the concerned Central government departments, the state governments and the Central and state boards. Taking into account the views expressed, Government decided to make certain amendments to the Act in order to remove such difficulties.

(18) *The Equal Remuneration (Amendment) Act,* 1987 (49 *of* 1987): The Equal Remuneration Act, 1976 (25 of 1976) provides for the payment of equal remuneration to men and women workers and for the prevention of discrimination, on the ground of sex, against women in the matter of employment and for matter connected therewith or incidental thereto. There was a lacuna in the Act so far as it did not specifically state that discrimination should not be made between men and women while in employment. The Amendment Act modified Section 5 of the Act to prohibit discrimination against women not only in recruitment, but also in relation to conditions of service subsequent to employment such as promotion, training, transfer, etc.

(19) *The All India Council for Technical Education Act,* 1987 (52 *of* 1987): The Act provides for the establishment of an All India Council for Technical Education with a view to the proper planning and coordinated development of the technical education system throughout the country, the promotion of qualitative improvement of such education in relation to planned quantitative growth and the regulation and proper maintenance of norms and standards in the technical education system and for matters connected therewith.

(20) *The National Housing Bank Act,* 1987 (53 *of* 1987): The Act provides for the establishment of a National Housing Bank with a view to giving effect to the recommendations of a high level group. In addition, the National Housing Bank will also play a role in the formulation of policies designed to promote housing in the country and provide guidelines for the working of all the agencies connected with housing.

(21) *The Railway Claims Tribunal Act*, 1987 (54 *of* 1987): The substantive liability of the railway administration for loss, destruction, damage, non-delivery or deterioration of goods entrusted to them for carriage, and for death or injury, or loss, etc., to a passenger in a railway accident involving a passenger train is laid down in the Indian Railways Act, 1890. The consigners/consignees and passengers or their representatives prefer claims for compensation against the railway administration. Those who claim compensation for loss of and damage to booked goods and are not satisfied with the decisions of the railway administration, file suits in the court of law. Claims for compensation for death, or injury, or loss, etc., to passengers in train accidents are at present settled by Claims Commissioners. As the litigation in the court of law and before the Claims Commissioners is very protracted, it was decided to set up a specialised tribunal for speedy adjudication of such claims. The setting up of such a Claims Tribunal with benches in different parts of the country and with judicial and technical members, will provide much relief to the rail-users by way of expeditious payment of compensation. The Claims Tribunal will also expedite settlement of disputes regarding refund of fare and freight charges. It will also reduce the burden on various civil courts in the country.

1988

1. *The Parsi Marriage and Divorce (Amendment) Act, 1988* (5 of 1988): The law relating to marriage and divorce among Parsis is contained in the Parsi Marriage and Divorce Act, 1936. The present Act seeks to implement certain recommendations of the Minorities Commission.

2. *The Authorised Translations (Central Laws) Amendment Act, 1988* (18 of 1988): The Act substitutes the words "Authorised Translation" appearing in the long title and sub-section (1) of Section 1 of the Authorised Translations (Central Laws) Act, 1973, by the words "Authoritative Texts". Earlier there was no provision for providing authoritative texts of Central laws, etc., in the languages (other than Hindi) specified in the Eighth Schedule to the Constitution. The present Act will enable the authoritative texts of Central Acts, etc., in the languages, other than Hindi, specified in the Eighth Schedule to the Constitution to be quoted in courts, and thereby facilitate the use of these languages in courts.

3. *The High Court and Supreme Court Judges (Conditions of Service) Amendment Act, 1988* (20 of 1988): This Act amends the High Court Judges (Conditions of Service) Act, 1954 and the Supreme Court Judges (Conditions of Service) Act, 1958. The Act provides for exemption from liability to pay income tax on certain perquisities, namely, the value of rent-free accommodation, the value of conveyance facilities and the sumptuary allowances provided to a judge of a High Court or a judge of the Supreme court.

4. *The Illegal Migrants (Determination by Tribunals) Amendment Act, 1988* (24 of 1988): This Act amends the Illegal Migrants (Determination by Tribunals)

Act, 1983, which provided for the establishment of tribunal for the determination of illegal migrants and their expulsion from India.

5. *The Religious Institutions (Prevention of Misuse) Act, 1988* (41 of 1988): The Act seeks to prevent the misuse of religious institutions for political and other purposes. It replaces the Religious Institutions (Prevention of Misuse) Ordinance, 1988.

6. *The Arms (Amendment) Act, 1988* (42 of 1988): The Arms (Amendment) Act, 1988 provides for enhanced punishments in respect of offences under the Arms Act, 1959.

7. *The National Security (Amendment) Act, 1988* (43 of 1988): This Act further amends the National Security Act, 1980 in its application to the State of Punjab and the Union Territory of Chandigarh.

8. *The Benami Transactions (Prohibition) Act, 1988* (45 of 1988): The Act replaces the Benami Transactions (Prohibition of the Right to Recover Property) Ordinance, 1988 promulgated by the President on 19th May 1988. It provides that no suit, claim or action to enforce any right in respect of any property held benami shall lie and no defence based on any right in respect of any property held benami shall be allowed in any suit, claim or action. It, however, made two exceptions, *viz.*, property held by a coparcener in a Hindu undivided family for the benefit of the coparceners and property held by a trustee or other person standing in a fiduciary capacity for the benefit of another person. It also replaced Section 82 of the Indian Trusts Act, 1882, Section 66 of the Code of Civil Procedure, 1908 and Section 281A of the Income Tax Act, 1961.

9. *The Prevention of Illicit Traffic in Narcotic Drugs and Psychotropic Substances Act, 1988* (46 of 1988): The Act confers powers of detention of persons engaged in illicit traffic in narcotic drugs and psychotropic substances with a view to preventing corruption.

10. *Prevention of Corruption Act, 1988* (49 of 1988): This Act consolidates and amends the law relating to prevention of corruption.

11. *The Aircraft (Amendment) Act, 1988* (50 of 1988): This Act amends Section 10 of the Aircraft Act, 1934. Under new sub-section (1A), any person who contravenes any rule prohibiting the slaughter and flaying of animals and depositing rubbish, etc., around aerodromes, will be punishable with imprisonment which may extend to one year or with fine which may extend to Rs 2,000 or with both. The contravention of the provisions of sub-section (1A) of Section 10 has been made a cognizable offence.

12. *The Labour Laws Act (Exemption from Furnishing Returns and Maintaining Registers by certain Establishments) Act, 1988* (51 of 1988): This Act provides for the exemption of employers in relation to small or very small establishments from furnishing returns and maintaining registers under certain labour laws mentioned in the First Schedule to the Act.

13. *The Dock Workers (Regulation of Employment) Amendment Act, 1988* (56 of 1988): This Act amends the Dock Workers (Regulation of Employment)

Act, 1948. It provides: (i) that the Dock Labour Boards shall submit their annual reports to the Government (there is already provision in the Act for submitting the audited accounts to the Government), and (ii) for the laying of the annual reports and the audit reports on the table of the Houses of Parliament or the State Legislature as the case may be.

14. *The Delhi Rent Control (Amendment) Act, 1988* (57 of 1988): This Act amends the Delhi Rent Control Act, 1958 (59 of 1958). It rationalises the present rent control law by bringing about a balance between the interest of landlords and tenants. It also intends to boost house building activity.

15. *The Motor Vehicles Act, 1988* (59 of 1988): This Act consolidates and amends the law relating to motor vehicles. Some of the important provisions of the Act are: (i) stricter procedures relating to grant of driving licenses and control over motor driving schools or institutions; (ii) provision for issuing fitness certificate of vehicles by the authorised testing stations; (iii) liberalised schemes for grant of stage carriage permits on non-nationalised routes, all-India tourist permits and also national permits for goods carriage; etc.

16. *The Salary, Allowances and Pension of Members of Parliament (Amendment) Act, 1988* (60 of 1988): This Act amends the Salary, Allowances and Pension of Members of Parliament Act, 1954.

17. *The Maternity Benefit (Amendment) Act, 1988* (61 of 1988): This Act amends the Maternity Benefit Act, 1961. Some of the important provisions of this Act are: (i) the application of the Maternity Benefit Act, 1961 has been extended to every shop or establishment in which ten or more persons are employed, or were employed on any day of the preceding twelve months; (ii) the qualifying period for grant of maternity benefit has been reduced from 160 days of actual work in the preceding 12 months to 80 days of actual work in the preceding 12 months; (iii) any woman deprived of maternity benefit or medical bonus or both or discharged or dismissed during or on account of her absence from work may, within 60 days from the date on which the order is communicated to her, appeal to such authority as may be prescribed; (iv) if any employer fails to pay any amount of maternity benefit to a woman or discharges or dismisses such a woman, such person shall be punishable with imprisonment which shall be not less than three months but which may extend to one year and with fine which shall not be less than Rs 2,000 but which may extend to Rs 5,000, and (v) any aggrieved woman or an office-bearer of a registered trade union of which such woman is a member, or a voluntary organisation or an inspector may file a complaint with the competent court regarding the commission of an offence under the Act. However, no such complaint shall be filed after the expiry of one year from the date on which the offence is alleged to have been committed.

18. *The Monopolies and Restrictive Trade Practices (Amendment) Act, 1988* (62 of 1988): The Act amends Section 22A of the Monopolies and Restrictive Trade Practices Act, 1969. Section 22A of the Act empowers the Central government to direct by notification that all or any of the provisions of Section 21 (relating to substantial expansion of undertaking) or Section 22 (relating to

establishment of new undertaking) will not apply to certain categories of proposals specified therein. The Act inserts a clause whereby the Central government is empowered to issue a direction in relation to proposals based totally on technology developed in India.

27 Youth Affairs and Sports

SPORTS is a state subject under the Constitution of India and the role of the Union government is mainly promotional, which is sought to be achieved by laying down guidelines to national sports federations for their improved functioning, rendering financial assistance for organising coaching camps and for participation of the teams in international tournaments, sanctioning grants to state sports councils, setting up of institutes for training coaches in different sports disciplines, etc. The Government also serves as a clearing house of information. A number of states have introduced sports as compulsory subject in the schools and some of them have started sports schools, sports hostels, etc.

On 31 December 1984, the then Department of Sports was redesignated as the Department of Youth Affairs and Sports.

YOUTH SERVICES

Youth programmes have been developed with twin objectives in mind, first, to enable young people to improve their skills and personality for effective participation in the process of development and secondly, to provide them direct opportunities to participate in the process of national development.

NATIONAL SERVICE SCHEME

National Service Scheme (NSS) aims at involvement of the Degree course students on a voluntary and selective basis in programmes of social service and national development. The scheme was started in 1969 with a coverage of about 40,000 students and has now gradually increased to cover about 9.30 lakh students for the year 1988-89. The scheme is being implemented in all states and union territories and in almost all the universities covering more than 3,500 colleges. The scheme has now been extended on an experimental basis to cover students at plus two stage also in some of the states and union territories.

Emphasis from 1976-77 onwards has been on programmes of rural reconstruction and activities aimed at improvement of conditions of life of the economically and socially weaker sections of the community. In addition to undertaking programmes like construction and repair of roads, school buildings, village ponds, tanks and tree plantation, NSS students participate in programmes like: (a) environmental enrichment and conservation; (b) health, family welfare and nutrition; (c) improvement in the status of women; (d) social service in welfare institutions; (e) production-oriented programmes; (f) work during emergencies, and (g) education and recreation including adult education and pre-school education programmes.

NSS students also render assistance to local authorities and communities in the implementation of various relief and rehabilitation programmes.

As part of the involvement of students during the vacation periods in constructive work, large scale camping programmes have been organised in the course of which some aspects of local needs of rural people are covered. Nearly half of the enrolled strength of NSS volunteers takes part in the special camping programmes organised in the adopted villages/urban slums under the theme "Youth for Rural Development".

A new dimension has been added to NSS programmes by undertaking activities relating to "Youth for Better Environment" with a view to creating awareness among students about the aims and nature of ecological problems of the country. Some of the activities pertaining to this programme are: (a) removal of water-hyacinth weeds from lakes; (b) pre-plantation operation like cleaning, alignment, trench fencing, digging pits, and manuring; (c) plantation of trees on hill tops and community places; (d) construction of soak pits and compost pits; (e) construction and laying of parks; (f) environmental cleanliness, and (g) creating awareness among students, teachers and members of the community about the problems of environment. From 1986, NSS volunteers have also been involved in Mass Functional Literacy Programme.

During the course of regular NSS programmes as well as special camping programmes, special attention is given to promotion of family welfare and 20-Point Programme; stress on character building; improvement of environment; pledge on national integration; community singing; development of culture; physical fitness, and involvement of scheduled caste and scheduled tribe students.

For establishing liaison at state and university levels and for coordinating programmes of different NSS units, 15 regional NSS centres are functioning in the country.

NEHRU YUVA KENDRA

Nehru Yuva Kendra Sangathan (NYKS) is an autonomous body under the Department of Youth Affairs and Sports. Its objectives are: to involve the rural youth in nation building and to develop their values and skills so that they become responsible and productive citizens of a modern India. NYKS is the most important and the largest grass-root youth organisation in the country. At present, it has a network of youth clubs in about 50,000 villages. By the end of 1989, there will be 480 NYKs, one in each district of the country.

Village youth clubs are the foundation of the NYKS movement. These youth clubs have a year-round programme of work which includes social and development work, cultural, sports and recreational activities. Through this network of village youth clubs, the NYKS also takes public programmes to the masses. Some of these programmes include adult literacy, immunisation, clean drinking water, etc.

NYKS provides support services to the youth clubs by organising youth leadership training, vocational training, work-camps, sports leagues, cultural festivals, adventure schemes, inter-state youth camps, exhibitions, study circles and youth seminars.

SCOUTING AND GUIDING

Scouting and guiding, which is an international movement, aims at character building of boys and girls making them good citizens and inculcating in them a spirit of loyalty, patriotism and thoughtfulness for others. Scouting and guiding also promotes balanced physical and mental development of boys and girls. Bharat Scouts and Guides is the major organisation to promote this activity. All India Boy Scouts Association is another organisation which is engaged in scouting and guiding movement and works largely among the non-student youth. The United Nations has recognised the Bharat Scouts and Guides in the efforts to pass on the message of peace to the people by naming it as the "Peace Messenger".

INTERNATIONAL EXCHANGE OF YOUTH DELEGATIONS

Under the provisions of Cultural Exchange Programme, youth delegations are sent abroad accompanied by officials concerned with youth policy formulation. Similar delegations are also being received from abroad.

PROMOTION OF NATIONAL INTEGRATION

The scheme of promotion of national integration provides: (a) exchange of visits of young persons from one part of the country to the other so as to familiarise them with environment, family life, social customs, etc., of the people living in different parts of the country and to appreciate the vastness of the country, its varied systems and yet a basic oneness which would engender among the participants a pride in being an Indian, and (b) organisation of national integration camps of students and non-student youth at different places in the country through the NYKs, voluntary agencies and educational institutions. During the national integration camps, young persons are exposed to inter-regional traditions, customs, literary and cultural heritage and are also made aware of the matters of national importance such as freedom movement, eradication of social evils including casteism, untouchability and dowry system and inculcating nationally accepted values like democracy, socialism, secularism, etc. One hundred and ninety such camps four zonal/regional festivals were held in 1987-88.

NATIONAL SERVICE VOLUNTEER SCHEME

National Service Volunteer Scheme was started in 1977-78 with the objective of providing opportunity to young people, particularly those who have completed their first degree course, to involve themselves for a specific period and on a voluntary basis in nation building activities on a whole-time basis. At present, volunteers are deployed to work with Nehru Kendras, National Service Scheme units and selected voluntary organisations as community workers for promotion of on-going programmes of the Kendras. The programmes seek to provide the youth, avenues for doing creative and constructive work suited to their educational background and aptitude. During the period of their deployment, the volunteers are paid stipends of Rs 300 and fixed travelling allowance of Rs 150 per month.

TRAINING OF YOUTH

This training scheme is intended to motivate youth and thereby spread knowledge in the rural society through participation in training courses based on the local needs and talents of young persons. Financial assistance is permissible under the scheme for obtaining training in fields like animal husbandry, different methods of agriculture, establishment of cooperative societies, health education, management at local levels, etc.

EXHIBITIONS FOR YOUTH

It provides an opportunity to the youth to gather knowledge about various developments in the country as well as enables them to project their contribution made in the field of national development, etc. Exhibitions on painting, art and crafts as well as folk dances and folk songs, cultural heritage, etc., are organised.

PROMOTION OF ADVENTURE

The scheme of promotion of adventure aims at inculcating a spirit of risk-taking, cooperative team work, capacity of ready and vital response to challenging situations and of endurance among the youth. Financial assistance is provided under this scheme for undertaking activities like mountaineering, trekking, hiking, exploration for collection of data, study of flora and fauna in the mountains, forests, deserts and sea, coastal sailing, raft expeditions, cycling, etc. There is also a provision of assistance for training as well as establishment and development of institutions to facilitate such activities. Besides extending assistance to the Indian Mountaineering Foundation, New Delhi for meeting the expenditure on its establishment and programmes, the Department also assists the Himalayan Mountaineering Institute, Darjiling and the Jawahar Institute of Mountaineering and Winter Sports, Jammu and Kashmir. Recently, a para-sailing training course has been started in New Delhi in collaboration with the NCC Directorate.

YOUTH HOSTELS

Youth hostels are built to promote youth travel. They are meant to provide cheap hostel facilities to young persons when they go on educational tours, excursions, visits to historical and cultural centres and are intended to foster the feeling of national integration and better understanding through such cultural contacts. The construction of youth hostels by the Government is conceived as a joint venture between Central and state governments. While the Central government bears the cost of construction, state governments provide developed piece of land free of cost with connection of water, electricity, approach roads and staff quarters. With a view to promoting youth hostels scheme in the country, 21 youth hostels have already been constructed and started at Amritsar, Aurangabad, Bhopal, Dalhousie, Darjiling, Gandhinagar, Hyderabad, Jaipur, Madras, Mysore, Naini Tal, Panaji, Panchkula, Pondicherry, Patni Top, Port Blair, Puri, Trivandrum, Agra, Ernakulam, Dimapur, Namchi and Itanagar. The construction of youth hostels at Calicut, Patna, Agartala, Tirupati, Vishakhapatnam, Naogaon, Goalaghat, Karwar, Ukhrul, Gopalpur-on-sea, Joshipur, Koraput, Bhubaneshwar, Jodhpur, Udaipur, Kota, Ajmer, Patiala, Sangrur, Rupnagar, Bhiwani, Gurgaon, Tura, Madurai, Thanjavur, Uttarkashi, Mussoorie, Lucknow, Allahabad, Kokokchung, Bakhali, Bhavnagar, Surat, Junagadh, Pavagadh, Tirth Rameshwaral Hill Station, Tezu, Cherrapunji, Tezpur, Wynad, Guwahati and Hassan, is under various stages

FINANCIAL ASSISTANCE

Youth clubs are assisted financially with the aim of promoting youth club movement in the country which had been started in the year 1986-87. Financial assistance for various youth activities e.g., library and reading facilities, sports activities, cultural programmes, promotion of fitness culture, etc., is given under the scheme to such youth clubs which have been registered not earlier than five years.

The financial assistance is extended to voluntary youth organisations for organising programmes relating to vocational training with a view to improving the functional capabilities of young persons so as to enable them to take up full-employment, self-employment or subsidiary employment, organising camps with a view to promoting national integration and also taking up social service activities, conducting surveys and research work and holding of seminars, etc. There is also a provision of assistance for organising youth leadership training programmes aimed at developing critical awareness of their environment.

NATIONAL YOUTH AWARD SCHEME

Young persons and voluntary organisations are given national youth awards. The aim of such awards is to encourage young persons to develop a sense of responsibility to their community and also to improve their own potential as good citizens.

Under this scheme, up to 50 awards, including one to a voluntary youth organisation, would be given each year for achieving excellence in different fields of social service or national development. Each of the persons selected for the national youth award is given a medal, a scroll and Rs 5,000 for outstanding work. In the case of the voluntary youth organisations, the amount of cash award is Rs 1,00,000. The first such awards were given in 1987 to 10 outstanding youth and one voluntary organisation. In 1988, another nine persons and one voluntary organisation were awarded.

SPORTS

NATIONAL SPORTS POLICY

The Government has adopted a national sports policy intended to focus the directions to be followed and objectives to be worked for. The policy resolution is based on the following points: (i) a time-bound programme needs to be drawn up for providing infrastructures for sports and physical education in villages and towns; (ii) efforts should be made by the Central and state governments to preserve playfields and open space; (iii) efforts should be made to ensure that the diet available to sportsmen and women has the nutritional value; (iv) sports talent should be identified at a young age and nurtured; (v) sports and physical education should be made an integral part of the curriculum as regular subject in schools and other national institutions; (vi) adequate incentives should be provided to those who excel in sports; (vii) efforts should be made to establish sports institutions; (viii) special consideration should be given to sports person in the matter of employment; (ix) cooperation of voluntary bodies should be enlisted for promotion of sports; (x) national sports federations etc., should implement effective plans and prepare national teams for participation in international competitions; (xi) international participation should take place only after competitions have reached the required standard; (xii) competitions should be encouraged in such disciplines as are recognised for Olympic Games, Asian Games and Commonwealth Games and for which a world federation exists; (xiii) appropriate equipment should be made available to Indian sportsmen and women; (xiv) non-governmental institutions should be encouraged to contribute for the promotion of sports; (xv) research and development in the fields of sports and physical education should be encouraged, and (xvi) mass media should be employed in spreading and sustaining sports consciousness in the country.

DEVELOPMENT OF SPORTS INFRASTRUCTURE

The Central government supplements the efforts of state governments, state sports councils, etc., towards improving and creating infrastructural facilities for sports and games. Grants are given for developing playfields, construction of stadia, swimming pools, gymnasia, sports complexes, etc., holding of annual state level coaching camps, establishment and maintenance of rural sports centres and floodlighting of playfields. It has now been decided that instead of paying cash grants, the sports equipment (of non-expendible nature) itself will be supplied to various state sports councils etc., through Netaji Subhas National Institute of Sports, Patiala. Financial assistance is given for the most part on a sharing basis of 50:50 between the Centre and the sponsoring agency, subject to specified limits, through the concerned state governments or union territory administrations. For hilly area, the Central contribution is 75 per cent of the total estimated expenditure subject to a maximum of certain specified ceiling. The assistance under the scheme for projects in union territory will be given on 'the basis of 100 per cent of the total approved expenditure subject to specified limits.

The Government has formulated a new scheme of financial assistance for development of basic sports facilities in secondary and senior secondary schools, particularly in rural areas. Under the scheme, initially one school will be selected in each taluka/block at a place other than district, sub-division or block headquarters. Central government will give one time assistance of one lakh rupees for provision of an athletics track, purchase of durable equipment like goal posts, hurdles, etc., and for construction of a gymnasium. The Central assistance will be conditional on the school employing a full-time teacher in physical education and making a provision of at least Rs 15,000 per year for maintenance of equipment and purchase of consumable stores.

GRANTS FOR SYNTHETIC TRACKS AND ARTIFICIAL SURFACES

Grants for laying synthetic athletics tracks and artificial hockey turfs are being given during the Seventh Plan. The quantum of assistance to state governments is limited to 50 per cent of the expenditure subject to a maximum of Rs 50 lakh per project.

At present these facilities are available in the NSNIS, Patiala and Delhi, synthetic athletics track in the Salt Lake Stadium, Calcutta, University Stadium, Trivandrum and artificial hockey turf at Sports College, Lucknow. In addition to these, the Government has also approved laying of artificial hockey turfs at NIS (East Centre), Calcutta, NIS (West Centre), Gandhinagar and NIS (South Centre), Bangalore.

PROMOTION OF SPORTS IN UNIVERSITY SECTOR

Sports and games are extensively promoted in the university sector. It is implemented through the agencies of University Grants Commission (UGC), Association of Indian Universities (AIU) and Netaji Subhas National Institute of Sports. While financial assistance for development of sports infrastructure in colleges and universities is extended through the UGC, AIU has been entrusted with the organisation of coaching camps and sports competitions among college and university students and with preparing Indian Universities' Contingents for international competitions. Three hundred scholarships of the value of Rs 3,600 per annum each, are awarded through Netaji Subhas National Institute of Sports to outstanding college and university sportspersons. Scholarships that are awarded are also renewed in subsequent years subject to scholarship holders maintaining or improving their performance.

PROMOTION OF SPORTS IN SCHOOLS

With a view to encouraging schools to take greater interest in promoting sports activities, the Government has formulated a scheme which stipulates that schools winning district level tournaments in athletics, hockey, basketball, football and volleyball, separately for boys and girls, except in football where the tournament would be only for boys, would be awarded cash prizes of Rs 10,000 each. Such cash prizes are required to be deployed by school authorities for direct promotion of sports activities and improving existing playgrounds or constructing new playgrounds, providing sports equipment, etc.

SPORTS TALENT SEARCH SCHOLARSHIP

Sports Talent Search Scholarship was introduced by the Government in 1970-71 to provide facilities to young boys and girls at school to develop their aptitude and to enable them to have nutritious diet. It provides for the award of 1,200 national level scholarships and 2,095 state level scholarships every year, each of the value of Rs 2,700 and Rs 1,800 per annum respectively on the basis of sports competitions at national and state levels. Besides, scholarships awarded during the previous year are also renewed in the following year provided the scholarship holder improves his performance.

PROMOTION OF WOMEN SPORTS

The National Sports Festival for Women first organised in 1975, has now become a significant national event. The programme is organised by Netaji Subhas National Institute of Sports. The national level festival is preceded by lower level competitions which are conducted by state governments/union territory administrations at block, district, division (where there are divisional commissioners incharge of two or more revenue districts) and state levels. Financial assistance is made available to state governments at the rate of Rs 400 per block, Rs 3,000 per district and Rs 10,000 for the state level tournament for bigger states and Rs 5,000 for others.

RURAL SPORTS TOURNAMENT

A countrywide programme of Rural Sports Tournament was launched by the Central government in 1970-71 with the twin objectives of involving a major segment of our youth in rural areas in the mainstream of the country's sports activities and also spotting and nurturing sports talent. The programme involves an estimated annual participation of over 20 lakh rural youth. The competitions are organised by state governments. The Central government provides financial assistance for it.

PROMOTIONAL INCENTIVES

Two kinds of incentives are given for the promotion of sports activities. These are: (i) the winners of international sports events are given special awards ranging from Rs 50,000 to Rs 5 lakh. A beginning has been made by awarding medal winners of 1986 Seoul Asian Games; (ii) for promotion of sports and games in schools, cash prizes of Rs 10,000 are given to the winning schools of district level tournaments held in athletics, hockey, basketball and volleyball.

NATIONAL WELFARE FUND

National Welfare Fund for sportspersons was constituted by the Government in 1982 for giving financial assistance to outstanding sportspersons, who are no longer active in sports and are in indigent circumstances.

TRAVEL GRANTS

Travel grants are provided to sports scholars and research workers for specialised training and research abroad. The purpose of this scheme is to encourage research and specialised study in matters relating to sports.

ARJUNA AWARDS

Arjuna Awards were instituted in 1961 for recognition of talented sportsmen and women who have distinguished themselves in different sports disciplines. Each of the Arjuna award winners is entitled to receive a bronze statue and a scroll of honour from the President. Besides, from 1983-84, the awardees are provided a lump sum of Rs 5,000 in lieu of the scholarship of Rs 200 per month for 24 months which was given to them in accordance with the earlier arrangement. So far 366 sportsmen and women have been given the awards.

DRONACHARYA AWARDS

Dronacharya Awards have been instituted by the Government from 1985 with a view to raising the standard of sports and games in the country. The specific objective of this award is to raise the prestige of coaches in different recognised disciplines of sports and to give them public recognition for outstanding and meritorious services rendered by them in shaping sportspersons to levels of excellence in international events thereby bringing glory to the country. Six awards can be given to those coaches who have coached sportspersons or teams to outstanding achievement in the year for which the award is given and consistently have very good achievements to their credit for three years preceding the year of the award. The award comprises a plaque, a scroll, a blazer and a tie in addition to a cash prize of Rs 25,000.

ORGANISATIONS

NETAJI SUBHAS NATIONAL INSTITUTE OF SPORTS

Netaji Subhas National Institute of Sports (NIS), Patiala was established in 1961. The Institute has been entrusted with the responsibility of producing and training high calibre coaches in various sports disciplines, implementing the national coaching scheme through a countrywide network of regional sports coaching centres and with assisting national sports federations in coaching and training of national sports teams for international competitions. The Institute has two regional centres (i) at Bangalore established in 1975 and (ii) at Calcutta established in 1983.

LAKSHMIBAI NATIONAL COLLEGE OF PHYSICAL EDUCATION, GWALIOR

The primary objective of the College is to provide facilities for training of high calibre leadership in physical education in our educational institutions and other organisations. The College, a co-educational institution, provides teacher training facilities for graduate and post-graduate studies and also for MPhil. and doctorate programmes in physical education. Since its inception in 1957, the College has produced about 3,050 graduate and post-graduate teachers of physical education both men and women. Besides its teacher training programmes, the College also provides extension services, refresher courses for in-service personnel and implementation on agency basis, some of the Central programmes like national physical fitness programmes, national prize competition for published literature in physical education and sports, etc. The College has established a National Resource and Documentation Centre in Physical Education to serve as a clearing house for professional information in physical education and sports for the general public.

SPORTS AUTHORITY OF INDIA

Sports Authority of India (SAI) was registered as a society on 16 March 1984 for promoting sports and games and for managing infrastructure and other facilities created for IX Asiad held in New Delhi in 1982. The Authority organises a number of activities for creating sports consciousness among the people.

The management, maintenance and utilisation of Jawaharlal Nehru Stadium, National Stadium, Tughlakabad Shooting Ranges, Talkatora Swimming Pool, Hauz Khas Tennis Stadium, and Yamuna Velodrome—all in New Delhi are the responsibility of the SAI. The Indira Gandhi Stadium, New Delhi also has been transferred to it from 15 January 1987 for maintenance, management and utilisation on behalf of the Government.

The erstwhile Society for the National Institutes of Physical Education and Sports set up by the Government in 1965 as an autonomous body has been amalgamated with the Sports Authority of India to avoid multiplicity of sports organisations.

28 India and the World

BASIS OF FOREIGN POLICY

THE basic parameters of India's foreign policy were laid down by Jawaharlal Nehru, India's first Prime Minister, more than four decades ago.

Jawaharlal Nehru took the initiative to convene the first-ever Asian Relations Conference in 1946 to announce to the world that Asia had come into its own. The responsibility assumed by India was "not necessarily for leadership", as Nehru put it, "but for taking the initiative sometimes and helping others to cooperate."

The international environment in the late forties began to change for the worse, and as the cold war mounted and rival military groupings began to emerge, India adopted a policy of non-alignment to promote peace and cooperation with all nations in order to devote its energy and resources to national development and social progress. Non-alignment meant making independent decisions on international issues without being tied to any particular country or group of countries. It was within the broad framework of this policy that India took initiative to develop friendly relations with its neighbours, supported the cause of countries still trying to free themselves from colonial domination and worked for the defusion of international crises that arose in different parts of the world from time to time.

COLONIAL ISSUES

Having suffered colonial domination for over two centuries and having witnessed some of the worst aspects of racial arrogance at first hand, India naturally gave priority to anti-colonial and anti-racial issues. The country extended its friendship and support to the people of Indonesia in their struggle against the colonial rule. At India's initiative, an 18-member conference was held in New Delhi in January 1949, which called upon the United Nations to take immediate steps towards independence of Indonesia. This was the first concrete manifestation of Asian solidarity. Thereafter, India lent similar support to other freedom movements and called upon the colonial powers to grant independence to subject peoples.

NEW ROLE IN FIFTIES

In 1950, the world faced its most serious crisis since the end of Second World War. India refused to take sides in the Korean war and maintained her independent policy while calling for a peaceful settlement. India had also warned against the danger of expansion of conflict if the armies of one side moved closer to the other's side. This constructive and impartial approach received recognition when India was chosen chairman of the United Nations Repatriation Commission to deal with the issue of prisoners of war. Similarly, throughout the

Indo-China crisis in the fifties, India, though not a party to the negotiations at the first Geneva Conference, actively worked behind the scenes and influenced the final decisions taken at that Conference about the future of Vietnam, Cambodia and Laos. India also served as chairman for the three international commissions for nearly two decades.

In 1956, when the Suez crisis endangered international peace and security following British-French-Israeli invasion of Egypt, India condemned this action and mobilised support in the United Nations and elsewhere to put an end to the intervention. Its proposals to defuse the situation were incorporated in the eventual plans for peaceful negotiations and settlement. India's principled support to Egypt, both within and outside the United Nations, contributed to the withdrawal of foreign troops from Egyptian territory and recognition of Egypt's sovereignty over the Suez Canal. India supplied a contingent of troops for the United Nations Emergency Force in the Sinai Peninsula. Similarly, Indian diplomacy played a leading role during the Congo crisis and Indian troops served with distinction in the United Nations Force which helped preserve the unity and territorial integrity of this African country. Indian diplomats and military officers also served with the United Nations Peace Keeping Force in Lebanon and Cyprus.

COMMONWEALTH

India played a key role in the transformation of the British Commonwealth into the present Commonwealth that we know today. India also took active interest in promoting stability and progress in the newly independent countries through direct economic assistance and through organisations like the Commonwealth. A pioneering case in point was the Commonwealth programme of £60,00,000 aid to Burma, despite the fact that Burma had left the Commonwealth. Nevertheless, India persuaded other members to agree to such an aid in order to assist Burma in preserving its independence. This initiative helped in the subsequent evolution of the Colombo Plan, which played a significant role in the economic development of the region.

It was in recognition of India's role in the Commonwealth as well as in world affairs, that the largest-ever meeting of the Commonwealth Heads of Government was held, for the first time, in New Delhi from 23 to 29 November 1983. The final documents issued by the Summit brought out the essential unity of approach and purpose in matters connected with peace and development. Later, Prime Minister Rajiv Gandhi's keynote address at the Commonwealth Heads of Government Conference at Nassau from 16 to 22 November 1985 ultimately led to the adoption of the Declaration of World Order.

India participated in the London Review Meeting of the Commonwealth leaders held from 3 to 5 August 1986 under the terms of Nassau Accord on Southern Africa. The leaders of Australia, the Bahamas, Canada, India, Zimbabwe and Zambia agreed on the immediate adoption of additional selective measures against South Africa in addition to those outlined in the Nassau Accord to put further pressure on the Pretoria regime.

At the meeting of the Commonwealth Heads of Government held in Vancouver from 13 to 17 October 1987, India played a major role in rallying opinion in favour of the continuation of mandatory sanctions against racist South Africa. The Summit, which demonstrated Commonwealth's determination for a continued thrust and momentum in the campaign against apartheid formed an eight-member Foreign Ministers' Committee, which included India as a member, to monitor the implementation of a programme of action on Southern Africa concerned with sanctions against South Africa, and rendering assistance by the international community to the Frontline States and other issues.

NON-ALIGNMENT

With the emancipation of people under colonial yoke, India's policy of non-alignment gained large scale acceptance. The first Non-Aligned Conference was held at Belgrade in 1961 in which 25 countries took part. The Belgrade Declaration for peace evoked wide response. The meeting also demonstrated utility of periodic consultations and exchange of views among non-aligned countries. More countries have joined the non-aligned movement since then and its present membership comprises 100 countries and dozens of observers and guests. Despite the enlargement of the membership, the movement has retained its basic thrust in favour of peace, disarmament, development and independence. The need for unity among non-aligned nations and the solidarity of their movement have found wide acceptance and recognition despite some minor differences. It is a measure of India's role in the non-aligned movement that India was elected as the chairperson of the movement and hosted the Non-Aligned Summit in New Delhi in March 1983. Even after handing over the chairmanship of the Non-Aligned Movement to Zimbabwe in September 1986, the Indian role and activity in the Movement has remained at a high pitch. India sustained her efforts to create consensus within the Non-Aligned Movement on major international issues and worked closely with the other non-aligned countries. She expressed her solidarity and support for the Movement for the Contradora process and the regional peace initiative symbolised by the Guatemala Accord. India also emphasised the need for the Movement to play an increasingly active role on global economic issues, particularly those concerning the non-aligned and other developing countries with a view to strengthening and broadening their position in regard to multilateral economic cooperation.

DISARMAMENT

India has proclaimed time and again her firm opposition to nuclear weapons and is in favour of total disarmament. She is also firmly committed to the peaceful utilisation of nuclear energy and is opposed to any moves or measures which are discriminatory in nature and which stand in the way of India's programme for the peaceful uses of nuclear energy. In particular, the convening of the Geneva talks between the USA and the USSR for reduction in nuclear armaments was warmly welcomed by India since it was the primary responsibility of the nuclear powers to take meaningful steps towards disarmament. Prime Minister Rajiv Gandhi in his address to the 40th Anniversary Commemorative Session of the United Nations in New York stressed "the need to cure the world of insanity of nuclear militarism and let man's creative genius be enlisted on behalf of enrichment and not destruction." He reiterated the objectives of the Delhi Declaration issued by the Six-Nation Summit in January 1985, consisting of the leaders of Argentina, Greece, India, Mexico, Sweden and Tanzania, in urging a twelve-month suspension of all nuclear weapon tests, and offering facilities for the process of verification. The leaders of the six nations met again on 6 August 1986 in Mexico and urged the two major nuclear weapon states to agree on a moratorium on nuclear-testing and put forward a concrete proposal to assist in achieving adequate verification arrangements for the same. The Eighth Conference of Heads of State of Non-Aligned Countries, which met in Harare in September 1986 also issued an appeal on disarmament to the USA and the USSR. The appeal reiterated the commitment of the NAM to nuclear disarmament and emphasised the need to reach an accord for a permanent moratorium on nuclear tests.

India played a leading role in the three main multilateral disarmament forums namely, the Conference on Disarmament, the UN Disarmament Commission and the First Committee of the UN General Assembly. This was in keeping with the consistent Indian belief that in the nuclear age disarmament is necessary not just for the maintenance of peace but for the very survival of mankind. India emphasised the validity of multilateral approach by reiterating that the search for unilateral security through nuclear deterrance must be replaced by a search for global security through nuclear disarmament.

In the crusade for nuclear and general disarmament, India along with other five nations of the Six-Nation Initiative welcomed on 22 January 1988, the INF Treaty between the Soviet Union and the USA as a historic step. Their Declaration in Stockholm appreciated the resumption of the dialogue and called for verification and compliance with agreements in this field.

Addressing the UN General Assembly's third special session on disarmament on 9 June 1988, Prime Minister Rajiv Gandhi asked UN to get behind an "action plan" which would commit all countries—the existing nuclear powers—to eliminate world's all nuclear weapons by the year 2010. He proposed that this "action plan" should be conducted in three stages, which would result not only in the elimination of nuclear threat but the establishment of a new UN "comprehensive global security system" that would ensure "peaceful co-existence for a new, just, equitable and democratic world order." The Prime Minister's detailed proposal also called for the establishment by the end of this century of "single integrated multilateral verification system to ensure that no new nuclear weapons were produced anywhere in the world." He also took direct issue with President Reagan's proposed 'Special Initiative' (the so-called "Star Wars") and declared that "the nuclear arms race can not be ended and reversed without a moratorium on such activity."

ECONOMIC ISSUES

The world economy is on the verge of recession with only a modest expansion in recent years. The slow growth path is evident from the rates of growth of output which declined somewhat from three per cent in 1985 to 2.8 per cent in 1986. Trade continued at four per cent growth in 1986, commodity prices declined further, new lending to developing countries has contracted and debt service has become even more difficult. Recent figures indicate that the total debt of developing countries reached US Dollar 1.1 trillion by the end of 1986.

The continuing stagnation of capital flows to developing countries resulted in a net transfer of resources of around US Dollar 3,000 crore in the fiscal year 1986, from South to North. Official Development Assistance (ODA) remained below half the internationally agreed level of 0.7 per cent. Many developing countries experienced a decline in per capita income and the gross domestic product (GDP) of developing countries as a group came down to 3.6 per cent in 1986 from 4.2 per cent in 1985. Protectionism has continued to increase despite repeated declarations of governments and the agreement to launch the new round of Multilateral Trade Negotiations (MTNs). The inter-dependence between North and South is now widely recognised and there is evidence that this is on the increase. Developed and developing countries have, however, been transmitting slow growth to each other.

The Seventh and Eighth NAM Summits at New Delhi and Harare had proposed constructive and pragmatic approaches for the revival of growth and development through multilateral cooperation and for arresting the retreat from multilateralism for development. They also proposed, at the same time, long-term structural reforms towards the attainment of the New International Economic Order (NIEO). Reforms in the global and inter-related systems of money, finance, debt, trade, technology and development are called for. Macro-economic policies of key industrialised countries need to be consistent and coordinated with the objective of stimulating demand and providing growth impulses to the world economy.

The Commonwealth Summit of October 1987 adopted a declaration on World Trade highlighting that special consideration be given to developing countries in the New Multilateral Trade Negotiations.

India has taken initiatives to facilitate the enhancement of the capacities of the South to adapt and develop new science and technologies through Non-Aligned Movement and Group of 77 conferences. it also took the initiative in the United Nations to commence a new process of international cooperation for sharing the fruits of these scientific and technological developments for the promotion of peace and a better quality of life, especially for developing countries. During the Ninth Session of the UN Inter-Governmental Committee on Science and Technology which was held in August 1987, at Indian initiative, a resolution was adopted by consensus seeking programmes, projects for shared development and cooperation in research, information and training technology forecasting and assessment in New and Emerging Science and Technology (NEST).

South-South cooperation has evolved as a major objective of the Non-Aligned Movement and the Group of 77 for the attainment of collective self-reliance and economic independence and for enhancing the leverage of the South in the world economy and in international economic relations as an important part of efforts to establish the New International Economic Order (NIEO). The setting up of an Independent Commission of the South for development issues can provide positive inputs on important economic issues. The Commission has formally commenced functioning with a first meeting held from 2 to 5 October 1987.

NAM Ministers met at Pyongyang in June 1987, to review the entire gamut of issues and activities in the South-South cooperation. Among the more important features of the outcome of the conference was the decision to operationalise the NAM Centre on Science and Technology in New Delhi and the endorsement and welcoming of Indian iniative in new and high science and technologies.

India's commitment to promote cooperation, in the spirit of South-South cooperation, with the other developing countries of the world in Africa, Asia and Latin America, found expression in the bilateral scheme of assistance under the Indian Technical and Economic Cooperation (ITEC) Programme operated by the Ministry of External Affairs. This bilateral programme of assistance supplements other multilateral schemes such as the Colombo Plan and the Special Commonwealth African Assistance Programme. The ITEC Programme which was launched in 1964 has steadily expanded over the years to cover, presently, over 70 countries in Africa, Asia and Latin America, with a budgetary outlay of over Rs 20 crore.

India played an active role in negotiations leading to the declarations adopted at the Ministerial Meetings of the Group of 77 and of the non-aligned countries, both held prior to the 43rd Session of the UN General Assembly. Discussions in the Second Committee were mainly on external debt crisis and related issues, environmental matters and the proposal of the Group of 77 to convene a special session of the General Assembly to reactivate growth and development in developing countries. Regrettably the resolution on debt had to be voted upon for the second year in succession, in addition to the negative vote of the United States. Japan abstained. India played an active role in facilitating consensus on the resolutions on environment. A major achievement this year was in obtaining agreement on the "main responsibility" of developed countries for combating pollution.

India was a member of ECOSOC during 1988 and played an active role in the second regular session. Important initiatives were taken by the Group of 77 during the second regular session in the area of environment. These included resolutions on additionality of resources and increase in technical cooperation, strengthening of the environment fund, traffic in toxic products and wastes and dumping of nuclear wastes. The Group of 77 also took the initiative in negotiating a resolution on the revitalisation of the Council itself. The role played by India in amending the resolution presented by the United States on entrepreneurship to reflect national entrepreneurs including public sector and the role of entrepreneurship in employment generation and acquisition of technologies earned the appreciation of delegations from all sides.

In October 1988, India hosted the first Inter-Governmental Consultative Conference of Experts of Non-Aligned and Developing Countries on New and High Technologies in New Delhi. This is a new area of cooperation in an emerging field. The meeting was attended by experts of 20 developing countries. Programmes of cooperation were identified in each of the five theme areas of the Conference.

SOUTH ASIAN ASSOCIATION OF REGIONAL COOPERATION

India played an active role in the promotion of South Asian Regional Cooperation from its inception. The first South Asian Summit was held in Dhaka in December 1985, culminating in the South Asian Association for Regional Cooperation (SAARC). The second Summit took place in Bangalore from 15 to 17 November 1986. The Bangalore Declaration, the Joint Press Release and the Report of the second session of the Council of Ministers were adopted at the Summit. A Memorandum of Understanding on the establishment of the SAARC Secretariat was signed by the Foreign Ministers in the presence of the Heads of State or Government. The SAARC Secretariat was inaugurated on 16 January 1987 in Kathmandu (Nepal).

India handed over the chairmanship of SAARC to Nepal at the Third SAARC Summit in Kathmandu in November. Of the nearly 100 activities organised by SAARC, India hosted 45. The third Summit meeting took important decisions which will have a bearing on the future course of SAARC. A Regional Convention was signed on the Suppression of Terrorism. On 6 August 1988, India ratified the SAARC Convention on Suppression of Terrorism. An agreement establishing a Food Security Reserve was reached which would enable member states to draw on food stocks in an emergency. Other important decisions were to commission a study on environment, to promote means of enhancing people-to-people contacts in SAARC countries and to undertake studies on various aspects of planning. It was agreed to establish a meteorological centre and an agricultural information centre in India and Bangladesh respectively. India announced a contribution of Rs 175 lakh for SAARC activities for 1988-89.

Prime Minister Rajiv Gandhi visited Islamabad from 29 to 31 December 1988 in connection with the 4th SAARC Summit. The Summit provided the opportunity for a complete review of the Organisation's activities during 1988. The Summit took the following major decisions:

- Education was included as an area of cooperation.
- A regional perspective plan called "SAARC 2000: A Basic Needs Perspective" is to be prepared, based on the aggregation of development targets set by individual member countries for the turn of the century in core areas of interest such as food, clothing, shelter, education, primary health care, population planning and environmental protection.
- A proposal for the establishment of a Centre for Human Resource Development is to be examined.
- South Asian Festivals are to be held from time to time, India is to host the first such festival.

SRI LANKA

The Agreement to establish peace and normalcy in Sri Lanka signed in Colombo on 29 July 1987, provided a framework for satisfying the legitimate aspirations of the Sri Lankan Tamils within a united Sri Lanka. The hope of durable peace and stability in Sri Lanka now rests upon the full implementation of this historic accord.

President Jayewardene issued a conmmunique on 30 June 1988, announcing his intention of allowing merger of northern and eastern provinces, forming a single provincial council after the elections, establishing a single High Court, granting Tamils equal status as Sinhalas and general amnesty to all those who took arms against the State provided the LTTE agreed to surrender arms and abide by the Indo-Sri Lanka Accord. He, however, reiterated that he would not bow to Tamil demands for a permanent merger of the northern and eastern provinces and would abide by the Indo-Sri Lanka Accord which provides for a referendum in the eastern province to decide the issue.

The restoration of peace and normalcy in Sri Lanka through the full and faithful implementation of the Agreement remains a cardinal objective of the Government of India.

PAKISTAN

India continued its quest for better relations with Pakistan. This is in keeping with India's commitment to develop cordial, cooperative and good-neighbourly relations with Pakistan in accordance with the letter and spirit of the Shimla Agreement. Apart from the PM-Zia Meeting in New Delhi in February 1987 and the PM-Junejo Meeting in Kathmandu in November 1987, a number of important bilateral meetings were held at Secretary level on matters pertaining to maintaining tranquillity at the Indo-Pakistan border, preventing trafficking in drugs and promoting economic cooperation and trade.

During his visit, Prime Minister Rajiv Gandhi in December 1988 had intensive discussions with Prime Minister Ms Benazir Bhutto on bilateral and other issues of mutual interest. These talks culminated in the signing of three agreements with Pakistan, namely, (i) Prohibition of Attack against Nuclear Installations and Facilities, (ii) Cultural Cooperation Agreement and (iii) Avoidance of Double Taxation of Income Derived from International Air Transport.

India's sincere sentiments for good relations have not been reciprocated by Pakistan, as is evident from a series of negative actions taken by it which have vitiated the atmosphere, adversely affecting India's relations. These include its weapon-oriented nuclear policy, its quest for sophisticated weapons like AWACS far beyond its genuine defence requirements, its involvement with extremist activities directed against India, its orchestrated and concerted efforts to internationalise the Kashmir issue, its resorting to offensive military action in the Siachen area, its unwillingness to have non-discriminatory trade relations with India and its reluctance to increase people-to-people contacts.

BANGLADESH

The Government of India continued its efforts to maintain regular contact with the Bangladesh Government and to strengthen friendly relations. The Minister for Human Resource Development, PV Narasimha Rao visited Dhaka on 17 August 1987 as the Prime Minister's special emissary and held extensive discussions with President Ershad on matters of mutual interest. During this visit the importance of Bangladesh taking urgent action to take back more than 49,000 Chakma refugees who had entered India from Bangladesh after April 1986, was stressed. Unfortunately, despite the matter having been raised with Bangladesh repeatedly, the problem continues unresolved and the refugees are still in India unwilling to return without credible guarantees from the Bangladesh Government about their safety. On the question of the sharing of common river waters, the term of the Joint Committee of Experts engaged in studying the subject was extended twice, first in May 1987 and then again in November 1987.

NEPAL

India and Nepal continued to nurture their traditional and friendly relations. The Prime Minister visited Kathmandu in November 1987 for the SAARC Summit and had wide-ranging and fruitful discussions with His Majesty the King of Nepal. The intensive Indo-Nepal economic collaboration received an added dimension with the signing of the Agreement on the setting up of the Indo-Nepal Joint Commission in June 1987.

BHUTAN

The traditionally close and friendly relations between India and Bhutan were further strengthened. The SAARC Summit in Kathmandu held in November

1987 offered an opportunity for discussions on subjects of mutual interest at the highest level between His Majesty the King of Bhutan and Prime Minister Rajiv Gandhi. The discussions were marked by a close indentity of views and understanding of matters of mutual interest, reflecting the relationship of trust and cooperation that prevails between the two countries. In the economic field, cooperation flourished and India also provided experts and specialists to Bhutan in various fields.

THE MALDIVES

India's relations with the Maldives are cordial. The visit of the Prime Minister to the Maldives in February 1986 gave fresh impetus to the close relations with that country. An Agreement on economic and technical cooperation signed during the visit provides for the establishment of a Joint Commission to promote bilateral cooperation in the economic and technical spheres. In February 1987, the Maldivian Trade Minister Ilyas Ibrahim visited India along with a three-member delegation to discuss ways and means of expanding trade and industrial collaboration with India.

India's foreign policy initiative came into limelight when it reacted immediately on getting a call for help to thwart a coup attempt in the Maldives by mercenaries. Indian Government sent its Army to crush the rebellion with a heavy hand in November 1988 successfully. Soon after Maldives President Abdul Gayoom visited India to thank the Indian Government and Prime Minister Rajiv Gandhi for timely intervention in the matter.

BURMA

With Burma, existing cordial relations have been strengthened. During the visit of the Burmese Foreign Minister U Ye Goung to India in September 1987, Instruments of Ratification of the Maritime Boundary Agreement, signed in Rangoon in December 1986, were exchanged. With this, the Indo-Burma Agreement on the Delimitation of the Maritime Boundary has come into force. Prime Minister Rajiv Gandhi visited Burma in December 1987 and had extensive meetings with Chairman of the Burma Socialist Programme Party U Ne Win, President U San Yu and the Burmese Prime Minister. The talks centred around ways and means of expansion and further consolidation of the existing friendly relations.

AFGHANISTAN

India's bilateral relations with Afghanistan continue to develop satisfactorily. President Najibullah's brief halt in New Delhi in December 1987 was utilised for an exchange of views on matters of bilateral and regional importance. Earlier, Foreign Minister Wakil had paid a visit to Delhi in February 1987. The then External Affairs Minister, ND Tiwari also visited Kabul in May 1987 for attending the Eighth Session of the Indo-Afghan Joint Commission on Economic, Technical and Trade matters.

India, as a country in the region, is deeply affected by the situation in Afghanistan. Accordingly, India initiated contacts with various countries involved in the Afghan situation in order to help contribute towards a political solution. India welcomed the US and Soviet guaranteed Accord signed by Pakistan and Afghanistan at Geneva on 14 April 1988, which provided for pull-out of all Soviet troops from Afghanistan within nine months from 15 May 1988. Prime Minister Rajiv Gandhi stated on 20 April 1988 that "the Agreement in Geneva has opened the window of peace and stability in Afghanistan. We have played our role constructively and quietly". India and Afghanistan, on 4 May 1988, called for the proper implementation of the Geneva Accord as President Najibullah had detailed discussions with Prime Minister Rajiv Gandhi on the problems in the aftermath of the Accord.

Afghanistan Foreign Minister Abdul Wakil again visited India in March 1989 and had talks with Prime Minister Rajiv Gandhi and External Affairs Minister PV Narasimha Rao over the prevailing stalemate in Afghanistan after the Accord.

INDIAN OCEAN

The escalation of military presence of the great powers in the Indian Ocean and the heightened tension in the area has been a matter of deep concern. India remains firmly committed to the total elimination of all foreign military presence from the Indian Ocean region and complete dismantling of bases and other facilities used by outside powers in the area. India has supported the call for convening the Conference on the Indian Ocean at Colombo at an early date but not later than 1990.

SOUTH-EAST ASIA

India's friendly relations with the countries in the South-East Asian region continue to progress smoothly. The mutual desire to further develop and diversify bilateral cooperation, which found particular expression during the visit of the Prime Minister of India to some of the countries in the region in October 1986, has been further manifested in the form of increased high level exchanges and broadened interaction in economic, commercial and other areas.

INDO-CHINA

India's relations with the three Indo-China States remained extremely cordial. India's efforts have been directed towards finding a peaceful, negotiated, political settlement in Kampuchea, involving all the concerned parties. The visit of the Minister of State for External Affairs K Natwar Singh to the ASEAN and the Indo-China States in April-May and June-July 1987 respectively, created a better understanding between the ASEAN and the Indo-China States, and fostered a dialogue between the Kampuchean factions. India has supported and helped to foster the dialogue between Prince Sihanouk and Prime Minister Hun Sen of the People's Republic of Kampuchea. It has been seen as a breakthrough in the nine-year impasse and although interrupted, has started a process towards a possible settlement. India's economic and technical assistance to the Indo-China region continued to be channelled through the Indian Technical and Economic Cooperation (ITEC) programme.

FIJI

Fiji was the only country in the South Pacific with which India's relations suffered a setback following a coup there on 14 May 1987. In the wake of the coup, a systematic campaign was launched to deprive the Indian community in Fiji of its guaranteed constitutional rights. The discrimination was being made solely on the basis of the racial origin of the community. Moves were also afoot to change the existing Constitution which had given the Indians a modicum of fair treatment and parity. India expressed its deep concern at the overthrow of the democratically elected popular government in Fiji. It also condemned the racial overtone of the actions of the military regime in Fiji at international forums like the United Nations General Assembly and the Commonwealth Heads of Government meeting. India suspended bilateral trade and economic cooperation with Fiji and India's High Commissioner to Fiji was recalled for consultations. India has taken the position that any future constitutional agreements in Fiji, to be viable and effective, would have to be fair and acceptable to all the communities there.

AUSTRALIA/NEW ZEALAND

Prime Minister's visits to Australia and New Zealand in October 1986 had given the necessary impetus to the strengthening of bilateral relations with these countries. Follow-up to the visit to Australia continued in the form of a meeting of the Joint Business Council in March 1987 and a visit by the Secretary in the Australian Ministry of Foreign Affairs and Trade in September 1987 aimed at reviewing, monitoring and directing bilateral relations. India and Australia signed a Memorandum of Understanding on Space Research. Progress was also made on the conclusion of another Memorandum of Understanding on cooperation in meteorology.

EAST ASIA

India's relations with both the Republic of Korea (ROK) and the Democratic People's Republic of Korea (DPRK) continued to reflect improvements in India's political dialogue and greater avenues for economic cooperation.

CHINA

The transit visit of the then Minister for External Affairs ND Tiwari to

Beijing in May 1987, was an indication of India's desire to defuse tension on the border with China. There was a better understanding of each other's position as a result of the visit. It was stressed that a new beginning should be made to dispel misunderstanding and suspicions of the past. The Eighth Round of Official-Level Talks between India and China was held in New Delhi from 15 to 17 November 1987. The talks were held in a positive and constructive atmosphere. India's desire to reach a satisfactory boundary settlement, to maintain peace and tranquillity on the border and to make progress in other spheres of bilateral relations was conveyed to the Chinese delegation. It was recognised that the border question is one which is deeply embedded in the psyche of both peoples and that it will have to be tackled with patience and care. A Trade Protocol covering the period from 1 January 1987 to 31 March 1988, was signed between the two countries in Beijing in May 1987. The protocol envisaged a total trade turnover of US Dollar 15 to 20 crore in this period. India and China agreed in principle on 8 June 1988 to resume border trade across Tibet as the two countries signed a new and more flexible annual Trade Protocol for 1988-89 without any fixed targets or ceilings.

Prime Minister Rajiv Gandhi visited China from 19 to 23 December 1988. This was recognised as an event of major importance and historic significance since the visit marked a new beginning in India-China relations. The Prime Minister held discussions on bilateral, regional and international issues with Chinese Premier Li Peng, Chairman of the Central Military Commission, Deng Xiaoping, General Secretary of the Chinese Communist Party, Zhao Ziyang and Chinese President Yang Shangkun. During the visit, the two Governments signed an Agreement on Cooperation in Science and Technology, an Agreement relating to Civil Air Transport and an executive programme for the years 1988, 1989 and 1990 under the Agreement for Cultural Cooperation.

Earnest and in-depth discussions were held on the boundary question. It was agreed that this question should be settled through peaceful and friendly consultations between India and China. There was recognition that a favourable climate and conditions for a fair and reasonable, and mutually acceptable solution, should be created through sincere and unremitting efforts by both countries. It was also decided to establish a Joint Working Group on the question. The Group will address itself over the question of an overall boundary settlement, as well as ensure the maintenance of peace and tranquillity in the border areas. It was also agreed to develop relations actively in other fields.

A high level Chinese delegation led by Member of the Central Committee and Head of the International Liaison Department of the Central Committee of the Communist Party of China, Zhu Liang, visited India in February-March 1989.

JAPAN

Prime Minister Rajiv Gandhi met Prime Minister Nakasone of Japan in October 1987 when he stopped in Tokyo on his way to Commonwealth Heads of

Government Meeting in Vancouver, Canada. Besides bilateral matters, international matters of mutual interest were also discussed. Japanese Minister for Foreign Affairs T Kuranari paid an official visit to India in August 1987. Discussions on various bilateral matters comprehensively covered the areas of mutual interest and reflected the mutual recognition of the important roles of both countries in the Asian and global context. Japan became the largest donor to India of the Official Development Assistance (ODA) on a bilateral basis in 1987. Indo-Japan trade continued to reflect Japan's position as India's third largest trading partner though the trade volume remained low in the context of Japan's global trade. The Japan Month was held in the metropolitan cities of India in October-November 1987. The Festival of India in Japan was inaugurated by Prime Minister Rajiv Gandhi and his counterpart Noboru Takeshita in Tokyo on 15 April 1988. Indian Prime Minister dedicated the Festival to the steady growth of understanding and friendship between the people of the two countries.

WEST ASIA AND NORTH AFRICA

India's relations in the political, economic and cultural fields with the countries of West Asia were further consolidated and diversified. India persisted with its policy of firm and unequivocal support for the Palestinian cause. It lent active support in all international forums, to efforts for a comprehensive, just and equitable settlement of the Palestinian problem. A close political dialogue was maintained with Jordan and efforts to enhance bilateral economic cooperation continued. India's relations with Syria also continued to strengthen. The growing warmth in Indo-Egyptian relations continued during the year with renewed interest in bilateral cooperation in various fields. India's relations with the three States in the Horn of Africa *viz.*, Djibouti, Sudan and Somalia continued to remain steady. In the Maghreb region India continued with its close cooperation and consultations with Algeria. Relations between India and the six countries of the Gulf Cooperation Council, namely, Saudi Arabia, the UAE, Kuwait, Baharain, Qatar and Oman continued to be cordial. These relations are characterised by an important economic dimension. India always supported the UN Secretary General's efforts to end the Iran-Iraq war and welcomed Iran's acceptance on 18 July 1988, of a UN call for a ceasefire. Welcoming Iran's acceptance of the UN Security Council's Resolution 598, India viewed that this would be significant to the attainment of peace and security in the region.

India has agreed to contribute its troops for the UN Peace Keeping Force for monitoring the ceasefire agreement between Iran and Iraq. India welcomed the announcement of ceasefire from 20 August 1988, and the subsequent direct talks between Iran and Iraq for arriving at a just and durable peace.

AFRICA (SOUTH OF THE SAHARA)

With the countries of Africa (South of the Sahara), India's relations continued to grow satisfactorily. Significant efforts were made to strengthen India's links with the Frontline States and Liberation Movements in South Africa. India continued to play a major role in the struggle waged in Southern Africa for dismantlement of the abhorrent system of apartheid and the abolition of the last vestige of colonialism in that part of the world. At the Meeting of the Commonwealth Heads of Government, held in Vancouver in October 1987, India succeeded in frustrating attempts at diluting mandatory comprehensive sanctions against the Pretoria regime. A consensus for continuing the sanctions remained solid.

AFRICA Fund was established at the Eighth Conference of the Heads of State/Government of Non-Aligned Countries. Following the Summit meeting of the AFRICA Fund Committee, held in New Delhi on 24 and 25 January 1987, Prime Minister Rajiv Gandhi had written to all the Heads of State/Government forwarding a copy of the appeal and Plan of Action and calling upon all nations to contribute generously to the AFRICA Fund. On the whole, the response to the AFRICA Fund has been encouraging. At the Summit meeting held in January 1987, Prime Minister Rajiv Gandhi had announced India's contribution of Rs 50 crore to the AFRICA Fund. Thereafter, an exercise was mounted to identify the specific projects that India could take up for implementation keeping in view India's capability, experience and requirements of the Frontline States and Liberation Movements.

Bilateral relations with the countries of Africa continued to grow. A number of high level visits were exchanged. Angolan President Jose dos Santos paid an official visit to India in April 1987 and held wide-ranging discussions with Prime Minister Rajiv Gandhi. An Agreement in the field of economic and technical cooperation was signed during the visit.

EASTERN EUROPE/SOVIET UNION

India's traditionally warm and friendly relations with the USSR and other socialist countries of Eastern Europe continued to grow and strengthen. Exchange of visits at the highest level contributed in a large measure to this process; simultaneously the decisions of the meetings of India's Joint Commissions with many of the countries to increase substantially bilateral trade turnover, accelerate technology transfer, increase scientific cooperation; gave yet greater substance to India's relations with these countries. Prime Minister Rajiv Gandhi's visit to the USSR in July 1987 and the visit by the Chairman of the USSR Council of Ministers NI Ryzhkov to India in November 1987 continued the process of dialogue between the two countries at the highest level. During his visit, Prime Minister Rajiv Gandhi inaugurated the year long Festival of India in the USSR. He also had meetings with the Soviet General Secretary MS Gorbachev and Soviet Prime Minister NI Ryzhkov. These discussions were continued during Soviet Premier's visit to India in connection with the inauguration of the Festival of the USSR in India. The discussions revealed an identity or a close similarity of views between the two countries on bilateral, regional and international issues.

A long-term programme of cooperation in science and technology between India and the USSR up to the year 2000 AD was signed by Rajiv Gandhi and General Secretary MS Gorbachev during the Prime Minister's visit to USSR. During the course of Prime Minister Ryzhkov's visit to India, the status of wide-ranging Indo-Soviet economic and industrial collaboration was reviewed at length and steps discussed to further enrich and diversify this mutually fruitful cooperation. A high level Soviet delegation on Planning headed by the first Deputy Chairman of the USSR State Planning Committee, Prof SA Sitaryan visited India on 20 February 1989 for the eleventh meeting of the Planning experts from India and the USSR. This Indo-Soviet Planning Group has been established within the framework of the Inter-governmental Indo-Soviet Commission on Economic, Scientific and Technical Cooperation.

Soviet President Mikhail Gorbachev visited India in November 1988 to receive the Indira Gandhi Prize for Peace, Disarmament and Development for 1987 in New Delhi. During the course of his visit Gorbachev met President Venkataraman and Prime Minister Rajiv Gandhi and underscored the need for good relations among the Soviet Union, India and China for the destiny of Asia and for global progress.

The Festivals of India and the USSR have been planned on an immense and unprecedented scale in both countries. These will not only be an important landmark in the cultural life of the two countries, but would open up new avenues of understanding and cooperation in diverse fields and strengthen the friendship between the two countries. The two countries also celebrated the Fortieth Anniversary of the establishment of diplomatic relations in April 1987.

Cooperation with Hungary was intensified with the holding of a Special Session of the Indo-Hungarian Joint Commission in Budapest in October 1987. Indo-GDR economic relations have shown satisfactory progress. Relations between India and Yugoslavia continued to develop and grow. In the political field, the two countries have warm and friendly ties marked by a close similarity of views, as well as close cooperation relating to developments in the non-aligned world. Relations with Bulgaria were marked by continuing warmth and friendship. Indian participation in the Plovdiv Fair in May 1987 was appreciated. Indo-Czechoslovak relations received further impetus by the visit of the then Minister for External Affairs ND Tiwari in March-April 1987. His visit to Poland in April 1987 provided a fillip to Indo-Polish relations also.

WESTERN EUROPE

India's relations with the countries of Western Europe continue to be cordial and friendly. There was a broad similarity of views based on a belief in political and negotiated settlements for resolving international problems and reducing tensions, even if there were differences on specific issues. For India, Western

Europe continued to remain important as a major trading partner, as a source of economic assistance and for technology transfer. In addition, there is the need for political cooperation for curbing terrorism and extremist activity designed to harm India's security interests. For the West European countries India was seen as a growing economy, supported by policies of liberalisation and political stability, providing enormous opportunities for investments and a market for goods and services. The highly export-dependant economies of Western Europe, which are constantly in search for new markets considered India as one of the most important areas in Asia. India has increasingly come to be recognised as the most important country in the South-Asian region and potentially one of the most promising political and economic systems in Asia. The twelve members of the European Community continue to be India's major trading partners and cooperation with the Community was pursued vigorously in the fields of industrial cooperation, science and technology and investment. Countries of the region, and more specifically the Scandinavian countries, extended economic assistance for projects in the fields of social welfare, health and rural development.

Italian Prime Minister Giovanni Goria paid an official visit to India in January 1988, the first-ever official visit by an Italian Prime Minister. In order to curb anti-Indian activities carried out in and from countries in Western Europe, India closely monitored those activities and sought the cooperation of individual governments. Most governments in Western Europe have been responsive to our concerns and have, in specific cases, cooperated actively in curtailing these activities. India's specific concerns have been expressed to the British authorities and their cooperation requested in curbing anti-Indian activities in and from the UK. Some limited progress in this regard has been achieved.

UNITED STATES OF AMERICA

India has consistently sought a fruitful and cordial relationship with the USA. The historical tradition of intellectual interaction and people-to-people contacts and shared faith in democratic values provide a positive backdrop to the efforts to improve overall relations. Prime Minister Rajiv Gandhi visited Washington on 20 October 1987 while returning from the Commonwealth Summit in Vancouver. The Prime Minister had wide-ranging discussions with the then American President Ronald Reagan. One of the main objectives of the visit was to revitalise the relationship with a new agenda for the next few years, and to this end a package of new initiatives for bilateral cooperation was identified. Reflecting the increased confidence in bilateral ties was the US readiness to license the sale of a supercomputer to India. The two Governments also agreed to consult regularly to ensure that the US supercomputer export reflected the rapid pace of advancing technology and India's need for upgraded capability. Notwithstanding the progress in Indo-US relations, some differences remain on regional and international issues. Primary among these differences is the respective approach of the two countries to the non-peaceful dimensions of Pakistan's nuclear programme. During his visit to the USA, the Prime Minister of India reaffirmed that India had no intention of producing nuclear weapons unless constrained to do so.

CANADA

Indo-Canadian bilateral cooperation remained brisk and active in 1987. India and Canada continued to cooperate on combating the menace of extremism and terrorism directed against India. The Extradition Treaty signed in February 1987 would go a long way in tackling this problem.

A Canadian delegation headed by Minister for Trade, Industry and Technology Monte Kwinter visited India from 18 February 1989 to promote trade and industrial collaboration between the two countries.

LATIN AMERICA AND THE CARIBBEAN COUNTRIES

India's relations with the countries of Latin America and the Caribbean continued to grow. Exchange of visits, signing of bilateral agreements, cooperation on international issues as well as in the sphere of bilateral interests, and India's support for peace in the region contributed towards strengthening our traditionally cordial and friendly ties with the countries of the region. India continued to express concern over the Central American crisis and extended its unstinted support to the peace initiative of the Contradora Group and its Support Group. On various occasions in the Forums of UN and the Non-Aligned Movement, India reiterated its position that the crisis should be resolved peacefully through dialogue amongst the countries of the region without outside interference or introduction of high power rivalries India has welcomed the signing of the Accord in Guatemala City in August 1987 by the Presidents of the Republics of Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua on the procedure to establish a firm and durable peace in Central America and expressed the hope that the process of negotiations and dialogue would result in a just and lasting settlement, based on the respect for the right to self-determination of each country of the region and ensuring the security, sovereignty and independence of all States of the region, free of external intervention or threat of such intervention.

OVERSEAS INDIANS

Overseas Indians are increasingly being recognised as a potential bridge of understanding and cooperation between the country of their domicile and India. They, in turn, have evinced greater interest in developing their cultural and economic ties with India to which the Government of India has responded positively with due regard for the mutual benefit of India and the host country. Therefore, while the Government of India has always held that persons of Indian origin should identify themselves with and integrate in the country of their domicile. She remains alive to their general interests and welfare and has encouraged promotion of cultural contacts with them. As regards Indian nationals, the Government of India naturally holds itself responsible for their safety and welfare and takes all necessary steps in this regard. With the liberalisation of rules and procedures relating to investment by non-resident Indians, the Indian Missions abroad are called upon to respond to queries on a wide-range of subjects connected with investment. They also extend assistance to NRIs in this regard consistent with laws and regulations of the countries of their accreditation. The Special Coordination Unit within the Ministry of External Affairs keeps the Missions informed about the modifications in rules pertaining to investment by NRIs. It has a nodal responsibility for dealing with problems relating to overseas Indians that may arise from time to time and participates actively in inter-ministerial meetings dealing with NRI investment in India.

EXTERNAL PUBLICITY

The year-long celebrations of the Fortieth Anniversary of India's Independence starting 15 August helped in giving a new impetus to the already continuing efforts of the External Publicity (XP) Division to project the image of a modern and dynamic India and to promote widespread awareness of India's progress in diverse fields—economic, industrial, scientific and technological besides its rich cultural heritage and the resilience of its democratic institutions. The foreign press in Delhi was briefed regularly about India's policy on various issues. The XP Division undertakes the printing and publication of high-quality publicity literature on India depicting different facets of its national life.

INDIAN COUNCIL FOR CULTURAL RELATIONS

The activities of the Indian Council for Cultural Relations have been further diversified. Cultural delegations sponsored by the Council toured different regions of the world. The Council provided Indian audiences an opportunity to witness some of the best performing groups from abroad. It sponsored visits of over 31 cultural troupes and provided assistance to a large number of artistes to perform abroad. These included troupes which were sent to participate in various important festivals and celebrations held by various countries. The Council arranged for over 24 eminent Indians to travel abroad to present various facets of India's culture before international audiences. These included scholars, theatre experts, poets and other eminent personalities. It also handled a number of foreign cultural troupes as part of various cultural events such as the Africa Festival and the Festival of USSR in India. A thirteen-member Chinese performing group visited India during January-February 1987 as part of their tour of South Asia. The Council received over 25 distinguished personalities which included scholars, poets and academicians. Student delegations from Bhutan and Bangladesh were also received.

The Council organised several large scale cultural manifestations such as the Africa Festival in India and India Festival in Switzerland. The latter was a major cultural presentation undertaken by the Council entirely on its own and was inaugurated in Geneva and Zurich by the then Vice President of India R Venkataraman. The Council was entrusted with the performing arts component of the Festival of India in the USSR, Indian Manifestation in Sweden and International Ocean Festival in Mauritius. The Council also handled within India the leading performing troupes of the Festival of USSR. The Council coordinated the participation of 213 performing artistes in the International Ocean Festival in Mauritius. The ITDC organised a Food Festival and the Trade Fair Authority of India organised a Fashion Pageant. INS Vidyagiri of the Indian Navy was despatched to Mauritius for the Festival. The Africa Festival gave the people of India a glimpse of the vibrant richness of the culture of Africa. This Festival was organised in India from 25 May to 7 June 1987 with the participation of 6 African countries. The countries represented at the Festival were Burkina Faso, Ethiopia, Ghana, Mauritius, Nigeria and Senegal. The Festival of USSR in India was inaugurated on 19 November 1987. The Council was entrusted with the presentation of the leading performing troupes of the Soviet Festival including the Bolshoi Ballet and the Soviet circus.

The Council awarded 30 scholarships to foreign students under its Cultural Scholarship Scheme for 1987-88. It also disbursed scholarships on behalf of other agencies of the Government of India. The Council continued to publish six quarterly journals, namely, India Horizons, Africa Quarterly, Gagananchal, Thaqfaud, Hindi, Recontre Avec l' Inde and Papeles de la India. It has undertaken publication of Vision of India (reprint), Readings from India (reprint), Buddhism and National Culture and International Symposium on India and World Literatures. The ICCR also sponsored eight exhibitions abroad and received three from outside. The Council functions as the Secretariat for the Indo-US Sub-Commission on Education and Culture. For promoting greater awareness and appreciation of India's cultural heritage abroad, the Council has established Indian Cultural Centres in Suva (Fiji), Georgetown (Guyana) and Paramaribo (Surinam). The Centre for Africa was established within the framework of the ICCR to encourage greater interaction between India and the countries of Africa.

MISSIONS ABROAD

To project India's image abroad and to safeguard the national interests, there are 140 Missions, besides Honorary Consulate Generals/Consulates. A new Mission was opened at Gaborone in Botswana and a Consulate General in Tashkent in USSR.

PASSPORT OFFICES

There are 21 Passport Offices, spread all over the country.

29 States and Union Territories

ANDHRA PRADESH

Area: 2,75,068 sq km	*Population:* 5,35,49,673
Capital: Hyderabad	*Principal languages:* Telugu and Urdu

HISTORY AND GEOGRAPHY

The earliest mention of the Andhras is said to be in *Aitereya Brahmana* (2000 BC). It indicates that the Andhra, originally an Aryan race living in North India migrated to the south of the Vindhyas and later mixed with the non-Aryans. The regular history of Andhra Desa, according to historians, begins with 236 BC, the year of Ashoka's death. During the following centuries, the Satavahanas, Sakas, Ikshvakus, Eastern Chalukyas, Kakatiyas ruled the Telugu country. The other dynasties ruled over the country in succession were the kingdom of Vijayanagar, Qutub Shahy, followed by Mir Qumruddin and his successors, known as the Nizams. Slowly and gradually from the 17th century onwards, the British annexed the territories of the Nizam and constituted a single province of Madras. After independence, the Telugu-speaking areas were separated from the composite Madras State and a new Andhra State came into being on 1 October 1953. With the passing of the State Reorganisation Act, 1956, Telungana area was added to Andhra Pradesh.

Andhra Pradesh is bounded on the north by Orissa and Madhya Pradesh, on the west by Maharashtra and Karnataka, on the south by Tamil Nadu and the east by the Bay of Bengal. The sea border is about 600 miles in length.

AGRICULTURE

Agriculture is the main occupation of about 70 per cent of the people in Andhra Pradesh. Thirty five per cent of the cultivated area is irrigated. The state is surplus in foodgrains particularly rice. Other important crops are *jowar, bajra,* maize, *ragi,* small millets, pulses, tobacco, cotton, sugarcane, groundnut and bananas. The State accounts for about 55 per cent of the country's entire production of castor and 94 per cent of Virginia tobacco. Forests cover 23.3 per cent of State's area. Important forest products are teak, eucalyptus, cashew, casuarina, bamboo, softwood, etc.

INDUSTRY AND MINERALS

Several major industries are in operation around Hyderabad and Vishakhapatnam. These manufacture machine tools, synthetic drugs,

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NOTE The names, area and population are generally according to the CENSUS OF INDIA. 1981—Series I India-Part II B (i)—PRIMARY CENSUS ABSTRACT—General Population.

pharmaceuticals, heavy electrical machinery, ships, fertilisers, electronic equipment, aeronautical parts, cement and cement products, chemicals, asbestos, glass and watches.

Andhra Pradesh has virtual monopoly of quality chrysolite asbestos in the country. It accounts for about 86 per cent of India's total production of barytes. Other important minerals found are copper ore, manganese, mica, coal and limestone. The State ranks sixth in manganese ore production and second in mica and limestone production in the country. The State stands second in the country with regard to the deposits of minerals of strategic importance and sixth with regard to their value produced. Singareni coal mines supply coal to the entire south.

IRRIGATION AND POWER

Important irrigation schemes implemented include Nagarjunasagar project, Prakasam barrage, Tungabhadra low level canal, Kurnool-Cuddapah canal, Kadam project, Romperu drainage project and Upper Pennar project. Other important projects under implementation include the Sri Ramsagar project, the Vamsadhara project, Polavaram multi-purpose project and the Somasila project. The work on Telugu Ganga project intended to supply drinking water to Madras and irrigation to Rayalaseema and Nellore districts was launched in 1983.

Important power projects are the Machkund, Upper Sileru, Lower Sileru, Tungabhadra Dam, Nagarjunasagar and Nizam Sagar hydel power schemes and Nellore, Ramagundam, Kothagudam, Vijayawada and Hussain Sagar (Hyderabad) thermal stations. The installed capacity up to June 1987 was 3,592 mw. By the end of 1986, 24,000 villages had been electrified and 7.33 lakh pump sets energised. The State's prestigious power project, the Srisailam hydro-electric project, is under construction.

TRANSPORT

Roads

National highways passing through the State of Andhra Pradesh constitute 2,299 km and state highways 8,387 km. There are 25,419 km of major district roads and 85,156 km of other roads in the State.

Railways

Of the railway route of approximately 5,090 km in Andhra Pradesh, 3,079 km is broad gauge.

Aviation

Important airports connecting Bombay, Delhi, Calcutta, Bangalore and Madras are Hyderabad, Tirupati, Vijayawada and Vishakhapatnam. Cuddapah, Hyderabad, Rajamundry, Ramagundam, Tirupati, Vijayawada, Vizag and Warangal are connected by Vayudoot services.

Ports

The major port is Vishakhapatnam. Minor ports in the State are Kakinada, Machilipatnam, Bheemunipatnam, Narsapur, Krishnapatnam, Vadarevu and Kalingapatnam.

TOURIST CENTRES

Charminar, Salar Jung Museum, Golconda Fort in Hyderabad, Kakabiya Tarana Gate in Warangal, Sri Lakshmi Narasimha Swamy Temple, Kurnool, Buddha Stupas at Nagarjunkonda, the Tirupati Temple, etc., are the major tourist attractions in Andhra Pradesh.

GOVERNMENT

Governor: Kumudben Mani Shankar Joshi
Chief Minister: NT Rama Rao
Speaker: G Narayana Rao
Chief Justice: Yogeswar Dayal
Chief Secretary: GR Nair

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. Adilabad	16,128	16,39,003	Adilabad
2. Anantapur	19,130	25,48,012	Anantapur
3. Chittoor	15,152	27,37,316	Chittoor
4. Cuddapah	15,359	19,33,304	Cuddapah
5. East Godavari	10,807	37,01,040	Kakinada
6. Guntur	11,391	34,34,724	Guntur
7. Hyderabad	217	22,60,702	Hyderabad
8. Karimnagar	11,823	24,36,323	Karimnagar
9. Khammam	16,029	17,51,574	Khammam
10. Krishna	8,727	30,48,463	Machilipatnam
11. Kurnool	17,658	24,07,299	Kurnool
12. Mahbubnagar	18,432	24,44,619	Mahbubnagar
13. Medak	9,699	18,07,139	Sangareddi
14. Nalgonda	14,240	22,79,685	Nalgonda
15. Nellore	13,076	20,14,879	Nellore
16. Prakasam	17,626	23,29,571	Ongole
17. Nizamabad	7,956	16,79,683	Nizamabad
18. Rangareddi	7,493	15,82,062	Hyderabad
19. Srikakulam	5,837	19,59,352	Srikakulam
20. Vishakhapatnam	11,161	25,76,474	Vishakhapatnam
21. Vizianagaram	6,539	18,04,196	Vizianagaram
22. Warangal	12,846	23,00,295	Warangal
23. West Godavari	7,742	28,73,958	Eluru

ARUNACHAL PRADESH

Area: 83,743 sq km[1]	*Population*: 6,31,839
Capital: Itanagar	*Principal languages*: Monpa, Miji, Aka, Sherdukpen, Bangni/Nishi, Apatani, Tagin, Hill Miri, Adi-Gallong, Minyong and Padm, Idu, Mishmi, Khampti, Nocte, Tangsa and Wancho

HISTORY AND GEOGRAPHY

The history of Arunachal Pradesh goes back to hundreds of years into mists of tradition and myth. Local tradition regards the country around Sadiya as the ancient Vidarbha. The ancient *Puranas* have many references to the region. The recorded history of Arunachal Pradesh can be traced only when Ahom kings began to rule Assam in the 16th century. The British took possession of Assam in 1838. The British Government had brought Arunachal Pradesh also under their administrative control. After independence, it was a part of the North East Frontier Agency and later made a union territory. On 20 February 1987 Arunachal Pradesh was made a full-fledged State.

Arunachal Pradesh is skirted by Bhutan in the west, Tibet and China in the north and north-east and Assam in the south. It consists of the submontane and mountainous ranges sloping to the plains of Assam.

AGRICULTURE

The mountainous terrain of Arunachal Pradesh is peopled by a variety of tribes. Barring only six towns, the entire area is rural where an overwhelming 94 per cent of its population lives scattered in 3,257 villages grouped under 48 integrated rural development blocks. Agriculture is the mainstay of the people, who by and large follow a slash and burn method of shifting cultivation called *jhum* practised on the rain-fed slopes of forested hills and dales. The cultivators constitute 35.33 per cent of the total population and they represent 72.29 per cent of the total number of workers engaged in different economic activities. The rural economy is obviously agrarian.

About four per cent of the total geographical area was brought under agriculture till August 1987, while forests covered about 62 per cent of the area. The gross cropped area was 1,96,131 hectare, of which 52.52 per cent was under jhum and the rest under permanent cultivation--wet-rice and terraced rain-fed cropping. Rice is the principal crop and the other important crops are maize, millet, wheat, pulses, potato, sugarcane and oilseeds.

The ecological conditions in Arunachal Pradesh are congenial for the growth of horticulture. Besides pineapple, orange, lemon, *lichi*, papaya, banana, guava, temperate fruits such as apple, plum, pear, peach, cherries, walnut, almond, etc., are grown in about 1,390 horticulture gardens.

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[1] The area figure is provisional.

The *Gramsevak* Training Centre and the Farmer's Training Centre at Pasighat impart training in the scientific methods of rural development and agriculture respectively.

MINERALS AND INDUSTRIES

Endowed with abundant forest, mineral and hydel power resources, Arunachal Pradesh has a high industrial potential. The coal reserve of the state comprising the Namchik-Namphuk coal mine in the Tirap district is estimated at about 900 lakh tonnes. This coal mine has been leased out to the Coal India Ltd. for commercial exploitation. The estimated crude oil reserve is 15 lakh tonnes. Vast deposits of dolomite exist at Rupa in the West Kameng district. The limestone deposit at Tidding in the Lohit district indicates a reserve of 910 lakh tonnes. Limestone also occurs at Hunli in the Dibang Valley district and Menga in the Upper Subansiri district. These apart, occurrences of graphite, quartzite, kyanite, mica, iron and copper ores were also reported.

Remarkable progress has been achieved in the field of cottage industries, of which weaving, basketry and carpet-making merit particular mention. The small scale industries, numbering, 1,617 in 1986-87, comprise saw, rice and oil mills, fruit preservation, soap and candle manufacturing units, steel fabrication, wood works and so on. The medium industries, 14 in number, are all forest-based, producing veneers, tea-chests and plyboards. Besides these, there are 25 sericulture centres.

The important industries are the light roofing-sheet factory at Pasighat, a fruit processing plant at Nigmoi in the West Siang district, the cement plant at Tezu, a lemon grass oil expeller unit at Tawang and a citronella distillation plant at Pasighat. An electronic unit has been set up at Itanagar for assembling television sets, quartz clocks, mini microphones, radio, etc.

Technical education and training in middle-level engineering is imparted in the Industrial Training Institute at Roing. There are 64 craft and weaving centres providing training facilities and producing utility articles which are marketed through a number of emporia. Industrial estates have been established at Itanagar, Naharlagun, Pasighat and Deomali. The Arunachal Pradesh Industrial Development and Financial Corporation Ltd., Itanagar, provides subsidised industrial loans to the small scale and medium industries.

The newly established North-Eastern Regional Institute of Science and Technology in Itanagar is the first of its kind in this part of the country.

IRRIGATION AND POWER

Jhum fields on the slant of hills under shifting cultivation are rain-fed. Patches of land under terrace and wet-rice cultivation, particularly in the riverain tracts and along the foothills belt, are irrigated usually by small gravity channels and diversion weirs. Pumping sets are also used for irrigation of small holdings.

Under the Minor Irrigation Projects, 50,455 hectares of land was brought under irrigation potential.

The number of micro and small hydel stations commissioned till March 1986 was 22 with a total installed capacity of about 12,370 kw. Diesel sets are also used to meet power requirements and their total installed capacity during 1985-86 was about 5,705.50 kw. In 1986, 27,760 kw of electricity was generated by micro-hydel projects and 3,079 kw by diesel sets. Electricity was extended to 917 villages.

TRANSPORT

Arunachal Pradesh has 330 km of national highway. Along, Daparizo, Pasighat, Tezu and Ziro are air linked by Vayudoot service.

TOURIST CENTRES

The places of tourist interest are Bomdila, Tawang and the nearby largest Buddhist monastery in India, Itanagar with the excavated ruins of the historical Ita Fort, Malinithan and Bhismaknagar-the other two important archaeological sites, the Parasuram Kund, a place of pilgrimage and the Namdapha Wild Life Sanctuary in the Tirap district.

GOVERNMENT

Governor: RD Pradhan
Chief Minister: Gegong Apang
Speaker: TL Rajkumar
Chief Secretary: M Die

The jurisdiction of the Guwahati High Court extends over Arunachal Pradesh.

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area[1] (sq km)	Population	Headquarters
1. Changlang[2]	NA	NA	Changlang
2. Dibang Valley	13,029	30,978	Anini
3. East Kameng	4,131	42,736	Seppa
4. East Siang	6,512	70,451	Pasighat
5. Lohit	11,402	69,498	Tezu
6. Lower Subansiri	13,010	1,12,650	Ziro
7. Tawang	2,044	21,735	Tawang
8. Tirap	7,024	1,28,650	Khonsa
9. Upper Subansiri	7,032	39,410	Daparizo
10. West Kameng	7,550	41,567	Bomdila
11. West Siang	12,006	74,164	Along

1. The area figures are provisional.
2. The new district of Changlang has been created according to the Arunachal Pradesh (Re-organisation of Districts) Amendment Bill, 1987.

ASSAM

Area: 78,438 sq km	*Population:* 1,98,96,843
Capital: Dispur (Temporary)	(Projected figures of Census 1981)
	Principal language: Assamese

HISTORY AND GEOGRAPHY

The word *Assam* is derived from the Sanskrit word *asom* meaning peerless, judged by her exquisite natural beauty, cultural richness and human wealth. Assam has a rich legacy of culture and civilisation behind her. Being the homeland of different races of men: Austric, Mongolian, Dravidian and Aryan that came to dwell in her hills and valleys at different times since remote antiquity, she has developed a composite culture of variegated colour.

Assam during the epic period was known as *Pragjyotisha* and later as *Kamrupa*. Narak's son Bhagadutta took part in the Kurukshetra war with his warriors. The earliest epigraphic reference to the kindom of Kamrupa is found in the Allahabad pillar inscription of Samudragupta. Here along with Samataka, Devaka and Nepala, Kamrupa is mentioned as a *Pratyanta* or frontier state outside the Gupta empire, but with friendly and subordinate relation to it. Hiuen Tsang, the Chinese scholar-pilgrim who visited Kamrupa in about 743 AD on an invitation of its monarch Kumar Bhaskar Varman, left a record of the kingdom he called *Kamolupa*. Kamrupa also figured in the writings of the Arab historian Alberuni in the 11th century. Thus since the epic period down to the 12th century AD the eastern frontier kingdom was known throughout Arya Varta both as Pragjyotisha and Kamrupa and the kings called themselves 'Lords of Pragjyotisha'.

The advent of the Ahoms across the eastern hills in 1228 AD was the turning point in Assam history. They ruled Assam up to 1826. The Burmese entered through the eastern borders and overran the territory, at a time when court intrigues and dissensions were sapping the vitality of the Ahom royalty. The British appeard on the scene, and by the Treaty of Yandabo in 1826, the Burmese ceded Assam to the British.

Assam which is situated in the north-east corner of India is surrounded by Bhutan, Tibet and Arunachal Pradesh on the north, Nagaland and Manipur on the east, Meghalaya and Mizoram on the south and Bangladesh, Tripura and West Bengal on the west. The geographical area covered by Assam is 78,438 sq km comprising 18 districts with a population of 199 lakh in 1981 (projected), decadal growth rate being 36 per cent. Only a narrow strip of submontane region of the Himalayas connects Assam with the Indian mainland. The flat alluvial valley is drained by the mighty Brahmaputra. The great river originates in western Tibet which brings down 6,500 lakh cubic feet of very fertile silt annually which is deposited in the valley between the Himalaya massif and the Meghalaya plateau and thence in the vast tract of Bengal delta. The State's climate is of humid tropical type in the plains and subalpine in the hills.

AGRICULTURE

Agriculture covers more than two-third of the labour force and supports more than 77 per cent of the population. The principal food crop is rice. The cash crops are jute, tea, cotton, oilseeds, sugarcane, potato, etc. The major horticulture items in the State are orange and other citrus fruits, banana, pineapple, arecanut, coconut, guava, *litchi*, mango, jackfruit, etc., which are grown on a smaller scale. The State has a gross cropped area of about 35 lakh hectare, more than 79 per cent of it being accounted for foodgrain crops. Paddy alone covers about 23 lakh hectares.

The area under forest, categorised as reserved forest covers 17,409 sq km or roughly 22.19 per cent of the total area of the State. Unclassed forests cover 10,064 sq km.

INDUSTRY

Of the agriculture-based industries, tea occupies an important place. Ever since wild tea bushes were first located in Upper Assam during the early 19th century, a good share of the economy of the State has increasingly been contributed by the tea industry. Assam leads the country's tea producing states, both in terms of quantity and the labour force. Tea gardens in the State occupy an area of around two lakh hectares. Assam contributes about 15.6 per cent of the world's entire tea production and the Guwahati Tea Auction Centre has now become the biggest tea auction centre in the world for CTC tea. According to the latest available figures, Assam had the highest tea output in the country in 1987, producing 54.7 per cent of the entire tea output in India. In terms of quantity, Assam produced 3,686 lakh kgs of the country's total tea production of 6,733 lakh kgs.

Exploration, exploitation and refining of petroleum form the bulk of the rest of industries in the State. Cottage industries include handloom, sericulture, cane and bamboo articles, carpentry, brass and metal crafts. An export-oriented handloom project has been established at Sualkuchi to exploit the potentiality of *Eri* and *Muga* silk textiles.

IRRIGATION AND POWER

The strategy so far adopted for irrigation development in the State was to mainly provide supplemental irrigation for the *kharif* crops and also pre-kharif and *rabi* to the extent possible from the available lean discharge at the source. The State has of late been ravaged by successive floods almost every year, causing extensive damage to the kharif which is the main crop, resulting in low annual agricultural growth rate.

To obviate this situation the Government is proposing to give the main thrust for increasing the yield as well as the acreage of the pre-kharif and rabi crops that can be cultivated and harvested during the flood-free period from October to

May with adequate irrigation support. Irrigation development in the State has been given a late start compared to other states in the country.

Against the ultimate irrigation potential of 27 lakh hectare, the irrigation potential created up to the end of 1987-88 was 4.94 lakh hectares of which 1.39 lakh hectares were through major medium projects and 3.55 lakh hectares through minor irrigation schemes. For improving the level of utilisation, Command Area Development Programme has also been taken up in the State with involvement of concerned agencies. At present Command Area Development activities are being carried out under three medium irrigation projects and proposed to be extended gradually to other projects as well.

Assam generates only one per cent of the total power output in the country. The thermal plants at Bongaigaon, Chandrapur and Namrup have a total installed capacity of 482.4 mw.

TRANSPORT

Roads

National highways– 2,035 km, state highways—1,895 km out of which 280 km is unmetalled. The Assam State Transport Corporation (ASTC) which is an undertaking of the State government, operates nearly 600 different services covering a total length of over 8,000 kms. Private transport operators handle both passenger and goods traffic inside the State and at inter-state levels as well.

Railways

The railway link connecting Assam with the rest of India was established in 1950. At present, there is a total of 2,337.57 km of railway track in Assam, comprising both metre guage and broad guage lines. Broad guage lines which were extended to Guwahati in 1984, comprise 262.09 kms. At present, there are eight long distance passenger trains connecting Guwahati with the rest of the country.

Aviation

There are six civil airports in the State operating regular air services. These are Borjhar (Guwahati), Salonibari (Tezpur), Mohanbari (Dibrugarh), Lilabari (Lakhimpur), Kumbhigram (Silchar) and Rowriah (Jorhat).

Inland Water Transport

The Brahmaputra river, flowing for over 700 km through the State, provides a navigable water-way for almost its entire length. The State Directorate of Inland Water Transport (IWT) and the Central Inland Water Transport Corporation (CIWTC) are two public sector organisations providing passenger and goods services in the waterways of the State. The IWT operates ferry services within Assam and the CIWTC runs cargo services between Calcutta and Guwahati (Pandu) and Calcutta and Karimganj. Ferry services are provided at 38 ghats on the Brahmaputra and Barak rivers. A commercial service is operational between Guwahati and Dibrugarh since June 1986.

FESTIVALS

While Assam shares the religious festivals observed throughout the country as also the national festivals like the Republic Day and the Independence Day, she has also an exclusive range of other colourful festivals.

Bihu is the chief festival of Assam, which is of three types: the *Rangali Bihu* or *Bohag Bihu* marks the advent of the cropping season and ushers in the new year, the *Bhogali Bihu* or the harvest festival and the *Kangali* or the *Bihu* of the lean period. The Bihus are popular agricultural festivals.

The Vaishnavites observe the birth and death anniversaries of the prominent Vaishnava saints through day-long singing of hymns and staging of *bhaonas* (theatrical performances in the traditional style). *Ambubachi* in the *Sakta* shrines and *Sivaratri* in the Siva temples are observed by most of the people. *Sivaratri mela* at Umananda and other places with Siva temples, *Asokastami mela, Rash mela, Parasuram mela, Ambubachi mela, Durga puja* are the other religious festivals.

The *Boro-Kachari, Rabha, Karbi, Mishing Ali-Ai-Lipang, Tiwa, Medam-Mai-Fe, Rajini Gabra* and *Marai Gabra* are the festivals celebrated by different communities in Assam.

TOURIST CENTRES

The important places of tourist interest in and around Guwahati are Kamakhya temple, Umananda (Peacock Island), Navagraha (temple of nine planets), Basistha Ashram, Gandhi Mandap, State zoo, State museum, Sukresuwar Temple, Geeta Mandir, Madan Kandev temple and Saraighat Bridge. In the rest of the State—Kaziranga National Park (famous for the one-horned rhino), Manas (tiger project), Sibsagar (Shiva temple), Tezpur (scenic beauty), Bhalukpunj (angling), Haflong (health resort, with the nearby Jatinga Hills famous for the bird mystery), Majuli (the largest river island in the world), Chandubi Lake (an ideal picnic spot), Hajo (meeting place of Buddhism, Hinduism and Islam), Batadrava (birth place of the great Vaishnav Saint Sankardeva) and Sualkuchi (famous for its silk industry) are worth visiting.

GOVERNMENT

Governor: Harideo Joshi
Chief Minister: Prafulla Kumar Mahanta
Speaker: Pulakesh Baruah
Chief Secretary: AP Sarwan
Chief Justice: Anisati Raghubir Prasad

AREA AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Headquarters
1. **Barpeta**	3,307.3	**Barpeta**
2. **Cachar**	5,102.2	**Silchar**
3. **Darrang**	3,465.3	**Mangaldoi**

	District	Area (sq km)	Headquarters
4.	Dibrugarh	7,023.9	Dibrugarh
5.	Dhubri	2,745.5	Dhubri
6.	Goalpara	2,843.8	Goalpara
7.	Jorhat	6,400.0	Jorhat
8.	Kamrup	6,601.4	Guwahati
9.	Karbi Anglong	10,332.0	Diphu
10.	Karimganj	1,839.0	Karimganj
11.	Kokrajhar	4,716.5	Kokrajhar
12.	Lakhimpur	5,646.4	Lakhimpur
13.	Nagaon	5,561.0	Nagaon
14.	North Cachar	4,890.0	Haflong
15.	Nalbari	2,022.8	Nalbari
16.	Pragjotishpur	47.3	Pragjotishpur
17.	Sibsagar	2,602.9	Sibsagar
18.	Sonitpur	5,225.2	Tezpur

BIHAR

Area: 1,73,877 sq km	*Population:* 6,99,14,734
Capital: Patna	*Principal language:* Hindi

HISTORY AND GEOGRAPHY

Bihar finds mention in the *Vedas, puranas,* epics, etc. Bihar was the main scene of activities of Buddha and the twenty four Jain Tirthankaras. The great rulers of the State before the Christian era were Bimbisar; Udayin, who founded the city of Pataliputra; Chandragupta Maurya and Emperor Ashoka of the Maurya dynasty; the Sungas and the Kanvas. Then came the Kushan rulers followed by Chandragupta Vikramaditya of the Gupta dynasty. During the medieval period Muslim rulers made their inroads into the territory. The first to conquer Bihar was Mohammad-bin-Bhakhtiyar Khalji. The Khaljis were followed by the Tughluqs, and then the Mughals. Taking advantage of the disintegration of the Mughal empire, the British established their foothold in Bihar with the battle of Plassey in 1757. Through successive battles and annexations, the British consolidated their position. Till 1911 Bihar formed part of the Bengal Presidency, when on 12 December 1911 a separate province of Bihar and Orissa was created. In 1936 Bihar was made a separate province.

Bihar is one of the major states of the Indian Union. It is bounded on the north by Nepal, on the east by West Bengal, on the west by Uttar Pradesh and Madhya Pradesh and on the south by Orissa. Bihar has a number of rivers; the most important is Ganga. Others are Sone, Poonpoon, Falgu, Karmanasa, Durgawali, Damodar, Subarnarekha, Baraker, Koel, etc.

AGRICULTURE

Bihar has 116 lakh hectare cultivated land out of 174 lakh total geographical area. Presently only 85 lakh hectare land is being cultivated. The principal foodgrain crops are rice, wheat, maize and pulses. Main cash crops are sugarcane, oilseeds, tobacco, jute and potato.

Forest cover is about 30,896 hectares, which is almost 19 per cent of the geographical area. Important forest products are timber, *kendu* leaves, lac, gum, sal seeds, etc There are 12 protected forests and two zoological parks.

INDUSTRY AND MINERALS

In core sector Bihar has steel plants at Bokaro and Jamshedpur, sponge iron project at Chandil, copper complex at Ghatsila, coal mining industries, oil refinery, heavy engineering and forging plant at Ranchi, fertilisers at Sindri and Barauni. Besides, the State has leading units manufacturing steel rope jelly filled communication cables, high tension insulators, watch factory, ceramic capacitors, etc., at Ranchi, TV receivers, fruit processing, bulk drugs and formulation, etc., at Hazipur, micronised mica papers at Koderma.

New projects with investment of nearly Rs 1,500 crore includes caprolactam and fertilisers, million tonne cement project, aluminium foil, aluminium extrusion, seamless steel tubes, newsprint, writing and printing papers, ferrites, hydrogen peroxide, multi-access radio system, float glass, ceramic cutting tools, etc.

Bihar accounts for about 40 per cent of the national mineral production. Important mineral deposits are copper, capatite and kyanite and sizeable deposits of coal, mica and china clay are found in the State. Bihar is one of the major iron ore producing states in India.

IRRIGATION AND POWER

Bihar has an ultimate irrigation potential of 65 lakh hectare through major and medium irrigation projects. However, up to 1987-88 this potential has been tapped only to the extent of irrigation to 26.99 lakh hectare out of which utilisation was in 24.05 lakh hectares. During the Seventh Plan it is estimated to create additional irrigation potential in 2.82 lakh hectare and utilisation in four lakh hectares. Thus by the end of Seventh Plan, *i.e.*, by 1990, irrigation potential in an area of 28.10 lakh hectare would be created out of which utilisation would be in 25.75 lakh hectares.

Major power projects are Patratu Thermal Power Station, Barauni Thermal Power Station, Muzaffarpur Thermal Power Station and Subarnarekha Hydel Power Station under Bihar State Electricity Board and Bokaro, Chandrapura and Durgapur thermal power stations along with Tilaiya, Maithon and Panchet hydel power stations under Damodar Valley Corporation. Electricity generated was 36,960 lakh units during 1986-87; besides 16,187 pumpsets were energised and 3,205 villages electrified.

TRANSPORT

Roads

In March 1988 Bihar had 30,035 km of metalled roads out of which national highway constitues 2,118 km and 39,000 km of unmetalled roads.

Railways

The rail network is well entrenched in Bihar. The main rail junctions are Bihar Sharif, Dhanbad, Gaya, Muzaffarpur, Patna, Ranchi and Sasaram.

Aviation

Airports at Jamshedpur, Patna and Ranchi have regular services to Calcutta and Delhi, through Indian Airlines and Vayudoot.

TOURIST CENTRES

Important places of tourist interest are: Rajgir (pilgrim centre); Bodh Gaya (the most sacred pilgrim place for the Buddhists); Gaya (centre of pilgrimage for the Hindus); Nalanda (the ruins of the world's earliest Buddhist university); Vaishali (the seat of the first Republic of the world in sixth century BC); Pawapuri (where Lord Mahavir breathed his last); Ranchi (waterfalls and scenic beauty); Jamshedpur (steel city); Hazaribagh (wildlife reserve famous for its National Park); Betla (Palamau National Park); Bhimbandh (hot water springs); Maner (sacred Muslim shrines of the Sufi Saint, Hazrat Makhdoom Shah); Vikramshila (ruins of another Buddhist university); Topchanchi (scenic value); Deoghar (Hindu shrines); Patna (ancient city of Pataliputra), and Sasaram (tomb of Shershah Suri).

GOVERNMENT

Governor: Jagannath Pahadia
Chief Minister: SN Sinha
Acting Chairman: Umeshwar Prasad Verma
Speaker: Hidyatullah Khan
Chief Justice: SK Jha
Chief Secretary: AU Sharma

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. Aurangabad	3,305	12,37,072	Aurangabad
2. Begusarai	1,918	14,56,343	Begusarai
3. Bhagalpur	5,589	26,21,427	Bhagalpur
4. Bhojpur	4,098	24,07,600	Arrah

District	Area (sq km)	Population	Headquarters
5. Darbhanga	2,279	20,08,193	Darbhanga
6. Deoghar	2,478.6	7,08,828	Deoghar
7. Dhanbad	2,966	21,15,010	Dhanbad
8 Gaya	6,545	31,34,175	Gaya
9. Giridih	6,892	17,31,462	Giridih
10. Godda	1,110.4	7,13,405	Godda
11. Gopalganj	2,033	13,62,123	Gopalganj
12. Gumla	9,077.1	10,17,231	Gumla
13. Hazaribag	11,165	21,98,310	Hazaribag
14. Jahanabad	1,569.30	6,83,667	Jahanabad
15 Katihar	3,057	7,40,837	Katihar
16 Khagaria	1,485.8	7,68,653	Khagaria
17. Lohardagga	1,490.9	2,29,786	Lohardagga
18 Madhepura	1,788.5	9,64,033	Madhepura
19 Madhubani	3,501	23,25,844	Madhubani
20 Munger	6,398.7	25,46,774	Munger
21. Muzaffarpur	3,172	23,57,388	Muzaffarpur
22. Nalanda	2,367	16,41,325	Biharsharif
23. Nawada	2,494	10,99,177	Nawada
24 Palamau	12,749	1,57,528	Daltonganj
25. Paschim Champaran	5,228	19,72,610	Bettiah
26 Patna	3,202	30,19,201	Patna
27. Purba Champaran	3,968	24,25,501	Motihari
28. Purnia	7,943	35,95,707	Purnia
29. Ranchi	7,574.1	18,23,415	Ranchi
30. Rohtas	7,213	23,66,325	Sasaram
31. Saharsa	4,071.8	19,89,770	Saharsa
32. Santhal Pargana	5,518.3	12,15,542	Dumka
33. Sahebganj	3,405.4	10,79,753	Sahebganj
34. Samastipur	2,904	21,16,876	Samastipur
35. Saran	2,641	20,84,322	Chapra
36. Singhbhum	13,440	28,61,799	Chaibasa
37. Sitamarhi	2,643	19,32,147	Sitamarhi
38. Siwan	2,219	17,78,930	Siwan
39 Vaishali	2,036	16,62,527	Hajipur

GOA

Area: 3,702 sq km	*Population:* 10,07,749
Capital: Panaji	*Principal languages:* Konkani and Marathi

HISTORY AND GEOGRAPHY

Goa, known in the bygone days as Gomanchala, Gopakapattan, Gopakapuri, Goapuri, Gomantak, etc., abounds in a rich historical heritage. The early history of Goa is obscure. In the first century of Christian era, Goa was a part of the Satavahana empire, followed by the Kadambas, the Rashtrakutas of Malkhed, the Chalukyas and the Silahars. The empire of the Yadavas in the end of the 14th century was displaced by the Khaljis of Delhi and thus the Muslim rule came to Goa. After the discovery of the sea-route to India by Vasco da Gama in 1498, many Portuguese expeditions came to India. In 1510, Afonso da Albuquerque, with the help of the Emperor of Vijayanagar attacked and captured Goa.

With the arrival of the great Jesuit Saint, Francisco Xavier in 1542, began proselytisation in Goa. However, the Portuguese continued to rule over the territory, except for an interlude during the later half of the 17th century when Shivaji conquered a few areas in and around Goa.

Even after the Indian independence, Goa continued to be in the hands of the Portuguese. However, they could not fulfil the aspirations of the Goan people and ultimately on 16 December 1961 Goa was liberated and made a composite union territory with Daman and Diu. On 30 May 1987 Goa was conferred statehood and Daman and Diu made a separate union territory.

Goa is situated on the western coast of Indian peninsula. On its north runs the Terekhol or Araundem river and on the south lies the North Canara district. On the east lie the Western Ghats and the Arabian Sea in the west. There are 36 islands in Goa out of which Tiswadi group is well known.

AGRICULTURE

Rice is the main food crop. Pulses, *ragi* and other food crops are also grown. The main cash crops are coconut, cashewnut, arecanut, sugarcane and fruits like pineapple, mango and banana. Irrigated area is 13.24 per cent of the total net sown area. The extent of government forests is estimated to be 27.8 per cent of the total land area.

INDUSTRY AND MINERALS

By March 1988 the total number of small scale units both under Small Scale Industries Development Organisation (SIDO) and non-SIDO stood at 3,900. Of these, units under SIDO accounted for 3,269 with an investment of Rs 58.96 crore and providing employment to 22,402 persons.

The minerals are iron, manganese, ferro-manganese, bauxite and silica sand. The mining industry contributes substantially to the economy of the State.

IRRIGATION AND POWER

A number of minor irrigation schemes such as, lift irrigation, *bandharas,* tanks, etc., have been taken up. The irrigated area during 1987-88 was 18,937 hectares. Some of the major and medium irrigation schemes are Salauli, Tillari, Anjune and Mandovi.

Out of the total 386 villages in Goa, eight are submerged due to the construction of a dam and one is uninhabited. The remaining 377 villages are electrified.

TRANSPORT

Roads

Of the motorable roads, national highway constitutes 224 km.

Railways

A metre guage line, Pune-Bangalore, links Goa with the rest of the country.

Aviation

Bombay, Delhi, Trivandrum, Hyderabad and Bangalore are air linked with Dabolim through regular Indian Airlines/Vayudoot service.

Ports

Panaji-and Marmugao are the two main ports in the State; Marmugao handles cargo vessels.

TOURIST CENTRES

Important tourist centres are: Colva, Calangute, Vagator; Harmal, Anjuna and Miramar beaches; Basilica of Bom Jesus and Se Cathedal churches,'Kavalem, Mardol, Mangueshi and Bandora pilgrimage centres; Aguada, Terekhol, Chapora and Cabo de Rama Forts; Dudhsagar and Harvalem waterfalls and Mayem lake resort.

GOVERNMENT

Governor: Khurshid Alam Khan
Chief Minister: Pratapshingh Raoji Rane
Speaker: DG Narvekar
Chief Secretary: PV Jayakrishnan
There is a common High Court for the States of Maharashtra and Goa.

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq kms)[1]	Population (1981 Census)	Headquarters
North Goa	1,713	5,68,021	Panaji
South Goa	1,948	4,39,728	Margao

1. Districtwise figures do not tally with geographical area of Goa State which are supplied by the Surveyor General, India since former represent "land use" area derived from figures supplied by the Directorate of Land Survey, Panaji

GUJARAT

Area: 1,96,024 sq km	*Population:* 3,40,85,799
Capital: Gandhinagar	*Principal language:* Gujarati

HISTORY AND GEOGRAPHY

History of Gujarat goes back to 2,000 BC about the time of the Indus Valley civilisation. It is also believed that Lord Krishna left Mathura to settle on the west coast of Saurashtra, which came to be known as Dwarka, the gateway. Later, it saw the various kingdoms; Mauryans, Guptas, Pratiharas and others. It was with the Chalukyas (Solankis) that Gujarat witnessed progress and prosperity. In spite of the plunderings of Mahmud of Ghazni, the Chalukyan kings were able to maintain the general prosperity and well being. After this glorious respite Gujarat faced troubled times under the Muslim, the Maratha and the British rules.

Gujarat played an important role in the freedom movement with Gandhiji at the helm of affairs. Before independence, the present territories of Gujarat were divided mainly into two parts: the British and the princely territories. With the reorganisation of the states, the Union of the States of Saurashtra and the Union Territory of Kachchh along with the former British Gujarat became a part of the bigger bilingual State of Bombay. With the bifurcation of the bilingual State of Bombay, the present State of Gujarat came into being on 1 May 1960.

It is situated on the west coast of India. The State is bounded by the Arabian Sea on the west, Pakistan and Rajasthan in the north and the east, Madhya Pradesh in the south-east and Maharashtra in the south.

AGRICULTURE

Gujarat ranks first in the country in the production of cotton and groundnut and second in the production of tobacco. Cotton and groundnut have found good markets and provide a foundation for important industries like textile, oil and soap. Other important cash crops are *isabgol,* cumin, sugarcane, mangoes and bananas. The chief food crops of the State are paddy, wheat and *bajra;* jowar and maize are produced in local areas.

In 1987-88 production of cotton was 2.95 lakh bales and foodgrains 13.62 lakh tonnes. Moreover, the production of cereals and oil seeds was to the tune of 12.19 lakh tonnes and 3.98 lakh tonnes respectively.

Forest species available in Gujarat are teak, *khair, sadad, haldarvo* and *manval* bamboos. The State has four National Parks and 11 sanctuaries.

INDUSTRY

Gujarat is dominant in textile industry but the change in industrial production base was signalled with the establishment of a refinery near Vadodara which is also producing aviation fuel, chemicals, fertilisers, drugs and pharmaceuticals, and dye-stuffs. The State produces two-third of the country's production of salt, around 90 per cent of soda ash, 16 per cent caustic soda and chlorine, 1/3 of drugs and formulations, 72 per cent of azodyes and sulphur black.

The dairy industry has made tremendous advance in the State. There are 14 milk processing plants with a capacity of nearly 11.11 lakh litres per day besides five milk product factories having the capacity of 23.45 lakh litres per day. There are 9,370 village level milk producers' cooperative societies having membership of 13.87 lakh.

Extensive exploration and production of oil and natural gas on commercial basis in Ankleshwar, Khambhat and Kalol area have put Gujarat already on the country's oil map. The setting up of the oil refinery at Koyali has led to considerable development of petro-chemical industries in this area.

The number of working factories by the end of 1986 was around 12,963 and the small scale units in 1987 were over 89,000. Moreover, many large and medium scale units in exclusive electronics estate at Gandhinagar, in addition to 150 small scale units, have come up.

IRRIGATION AND POWER

Important major irrigation projects completed include Ukai, Kadana, Kakrapar, Mahi Right Bank canal project-I, Shetruni (Palitana), Dantiwada, Hathmati, Meshwa and Bhadar. Besides, works at 84 major/medium irrigation project are at advanced stage of construction. Out of these 84 projects, 29 medium (including six modernisation projects) and six major projects are covered under the World Bank Aid Programme. An irrigation potential of 11.55 lakh hectare had been created by the end of June 1988, through major/medium irrigation projects. With a view to having better use of available water and to increasing the utilisation of the potential created, Command Area Development activities like construction of field channels and *warabandhi* have been taken up. Up to the end of June 1988 field channels in 7.52 lakh hectares and warabandhi in 5.03 lakh hectares have been constructed.

TRANSPORT

Roads

The State has approximately 61,739 km of roads, out of which 53,900 km are surfaced roads connecting 13,641 villages out of 18,114 villages. The first Express way of the nation is under construction between Ahmadabad and Vadodara.

Aviation

The main airport is Ahmadabad which is connected with Bombay, Jaipur and Delhi by five daily services. The State has eight other airports: Vadodara, Bhavnagar, Bhuj, Jamnagar, Kandla, Keshod, Porbandar and Rajkot. Ahmadabad, Bhavnagar, Kandla, Keshod, Porbandar and Surat are linked by Vayudoot services.

Ports

Gujarat has as many as 40 ports of which Kandla is the major one. Eleven are intermediate and 28 are minor ports.

FESTIVALS

Tarnetar Fair in honour of Lord Shiva at Tarnetar village is held on the 4th, 5th, and 6th of the bright half of the month of *Bhadrapada* (August/September). *Madhavrai Fair:* This fair celebrates the marriage by elopement of Lord Krishna and Rukmini, and every year on the 9th day of the bright half of the month of *Chaitra* (March/April), the incident is re-enacted. The venue is Madhvpur near Porbandar. *Ambaji Fair:*Ambaji is a popular pilgrim place dedicated to Amba, the mother goddess, in Banaskantha district in north Gujarat. Fairs are held on the 15th day of the bright half of the Hindu month, *Bhadrapada* (August-September), *Ashvin* (September-October), *Kartika* (November-December) and *Chaitra* (March-April). *Bhavnath Fair* is held on the 14th day of the dark half of the Hindu month *Magha* (January-February) at the foot of Mount Girnar, near Junagadh. *Somnath Fair* is held on *Kartika Purnima,* full moon (November/December). *Dangi Darbar:* The Dangs is a forested area where the *Adivasi* community lives. The fair, attended by all the tribal chiefs in their regal attire, starts a week before the spring festival of *Holi* (March). It commences with the lighting of a bonfire and when it ends the fire is extinguished. *Dwarka Fair: Janmashtami* or the birthday of Lord Krishna is celebrated with great enthusiasm in Dwarka and the biggest fair of the year is held here to mark the event. *Shamlaji Fair:* A three-week long fair is held on Kartika Purnima, full moon (November/December) at the Vishnu shrine of Shamlaji. Other festivals are *Makar Sankranti* (January) and *Navaratri* (September/October).

TOURIST CENTRES

Religious spots like Dwarka, Somnath, Palitana, Pavagadh, Ambaji, Bhadrashwar, Shamlaji, Taranga and Girnar; Porbandar, birthplace of Mahatma Gandhi, places of memorable monuments of architectural and archaeological surprises like Patan, Siddhpur Ghumli, temples of Polo, Dabhoi, Vadnagar Modhera, Lothal and Ahmadabad; beautiful beaches like Ahmedpur-Mandvi, Chorwad, Ubhrat and Tithal; hill station Saputara; lion sanctuary of Gir Forest and Enjar Wild Ass Sanctuary are the major tourist attractions in the State.

GOVERNMENT

Governor: Ram Krishna Trivedi
Chief Minister: Amarsinh Chaudhary
Speaker: Natvarlal Chandulal Shah
Chief Justice: Puliangud Ramaiya Pillai Gokulakrishnan
Chief Secretary: HR Patankar

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. Ahmadabad	8,707	38,75,794	Ahmadabad
2. Amreli	6,760	10,79,097	Amreli
3. Banaskantha	12,703	16,67,914	Palanpur
4. Bharuch	9,038	12,96,451	Bharuch
5. Bhavnagar	11,155	18,79,340	Bhavanagar
6 Gandhinagar	649	2,89,088	Gandhinagar
7. Jamnagar	14,125	13,93,076	Jamnagar
8. Junagadh	10,607	21,00,709	Junagadh
9. Kuchchh	45,652	10,50,161	Bhuj
10. Kheda	7,194	30,15,027	Kheda
11. Mehsana	9,027	25,48,787	Mehsana
12. Panchmahals	8,866	23,21,689	Godhra
13. Rajkot	11,203	20,93,094	Rajkot
14. Sabarkantha	7,390	15,02,284	Himatnagar
15. Surat	7,657	24,93,211	Surat
16. Surendranagar	10,489	10,34,185	Surendranagar
17. The Dangs	1,764	1,13,664	Ahwa
18. Vadodara	7,794	25,58,092	Vadodara
19. Valsad	5,244	17,74,136	Valsad

HARYANA

Area: 44,212 sq km	*Population*: 1,29,22,618
Capital: Chandigarh	*Principal language*: Hindi

HISTORY AND GEOGRAPHY

Haryana has a proud history going back to the Vedic age. The State was the home of the legendary Bharata dynasty, which has given the name Bharat to India. Haryana is immortalised in the great epic *Mahabharata*. Kurukshetra, the scene of the epic battle between the *Kauravas* and the *Pandavas* is situated in Haryana. The State continued to play a leading part in the history of India till the advent of the Muslims and the rise of Delhi as the imperial capital of India. Thereafter, Haryana has functioned as an adjunct to Delhi and practically remained anonymous till the first war of India's independence in 1857. When the rebellion was crushed and the British administration was reestablished, the *Nawabs* of Jhajjar and Bahadurgarh, the Raja of Ballabgarh and Rao Tula Ram of Rewari of the Haryana region were deprived of their territories. Their territories were either merged with the British territories or handed over to the rulers of Patiala, Nabha and Jind. Haryana thus became a part of the Punjab provinces.

The State is bounded by Uttar Pradesh in the east, Punjab in the west, Himachal Pradesh in the north and Rajasthan in the south. The Union Territory of Delhi juts into Haryana.

Haryana can be divided into two natural areas, sub-Himalayan terai and Indo-Gangetic plain. The plain is fertile and slopes from north to south with a height above the sea level averaging between 700 and 900 ft. The south-west of Haryana is dry, sandy and barren. Haryana has no perennial river. The only river which flows through Haryana is the Ghaggar which passes through the northern fringes of the State. For most of the year, the climate of Haryana is of a pronounced character—very hot in summer and markedly cold in winter.

AGRICULTURE

Agricultural production has risen progressively because of the infrastructure having been built since the inception of the State. The production of foodgrains had a quantum jump from 25.92 lakh tonnes in 1966 to nearly 81.46 lakh tonnes during 1985-86. The production of rice has risen seven times; the production of wheat five times and potatoes four times; while that of cotton has increased to two and a half times. Today, 27.10 lakh hectare area is under high-yielding varieties of wheat, rice, maize and *bajra* crops. This was merely 0.17 lakh hectares during 1966-67. The per hectare consumption of fertilisers has gone up over twenty fold from a mere 2.90 kg per hectare during 1966-67 to about 71 kg per hectare in 1986-87.

INDUSTRY

The major industries are cement, sugar, paper, cotton, textiles, glassware, brassware, cycles, tractors, motorcycles, time-pieces, automobile tyres and tubes, sanitaryware, television sets, steel tubes, hand-tools, cotton yarn, refrigerators, *vanaspati ghee* and canvas shoes, etc. A factory of the Hindustan Machine Tools producing tractors is located at Pinjore. It has the largest tractor manufacturing capacity in the country, while, Maruti Udyog Limited is the biggest automobile manufacturing unit in the country. The State today has 384 large and medium scale units as against 162 in 1966. The number of small scale units has increased from 4,500 to more than 80,000 today. An oil refinery with a capital outlay of Rs 1,500 crore with 60 lakh tonne capacity is being set up in Karnal district. A Rs 100 crore vaccine project is being set up in Gurgaon district as a joint sector venture with French collaboration.

IRRIGATION AND POWER

Haryana is a beneficiary of the multi-purpose project on Sutlej and Beas where it shares the benefits with Punjab and Rajasthan. The major irrigation projects are the Western Yamuna Canal, the Bhakra Canal System and the Gurgaon Canal. The water had to be raised from lower levels to the higher and drier slopes in the State. It is a bold new endeavour that gave practical shape to the lift irrigation for the first time in India. The State has completed Jui and Sewani lift irrigation schemes. The Jawaharlal Nehru irrigation scheme, the biggest of its kind, and Loharu lift irrigation scheme shall be completed soon. With these, additional irrigation to 2,86,000 hectares will be achieved. For irrigation and to conserve moisture of dry land, 279 micro water-sheds have been identified to store excessive run-off waters by constructing water storage structure. One hundred and forty one water-sheds have been completed and work on 60 others is in progress.

Haryana was the first State in the country to achieve cent per cent rural electrification in November 1970. All the harijan bastis of the State were provided street lights by 1981, again ahead of all states in the country. As many as 60,853 one-point connections had been released to harijan house-holds at concessional rates by 31 March 1988. The consumption of power, which was 17 lakh units a day at the time of formation of the State in 1966 is now more than 200 lakh units a day. The installed capacity of power rose from 343 mw in 1967-68 to 1,832 mw by 31 March 1988.

TRANSPORT

Roads

Haryana has 21,058 km of motorable roads, out of which only 2,000 km are unmetalled. National highway runs to 655 kms.

Railways

There is no major railway station in Haryana. Rail routes from Delhi to Agra, Ajmer, Ferozepur and Chandigarh cross through the State. Of the railway stations, Ambala and Kurukshetra are important.

Aviation

Delhi and Chandigarh airports on the eastern and northern boundaries link the State with other major national and international stations. At the formation of Haryana there was only one flying club at Hisar with a *kuccha* runway which came to the share of the State. At present there are six civil runways in the State at Hisar, Karnal, Pinjore, Narnaul and Bhiwani with all-weather pucca runway.

TOURIST CENTRES

Badkhal Lake, Dabchick (Hodal), Jungle Babbler (Dharuhera) Karna Lake (Uchana), Kala Teetar (Abubshehr), Kingfisher (Ambala), Magpie (Faridabad), Raj Hans (Surajkund), Skylark (Panipat), Sohna, Sultanpur Bird Sanctuary (Sultanpur), Surajkund and Yadavindra Garden (Pinjore). The number of tourist complexes in the state is 36.

GOVERNMENT

Governor: HA Barari
Chief Minister: Devi Lal
Speaker: HS Chatha
Chief Justice: V Ramaswami
Chief Secretary: LC Gupta

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. Ambala	3,832	14,09,463	Ambala
2. Bhiwani	5,099	1,20,052	Bhiwani
3. Faridabad	2,150	10,00,859	Faridabad
4. Gurgaon	2,716	8,49,598	Gurgaon
5. Hisar	6,315	14,96,534	Hisar
6. Jind	3,306	9,38,074	Jind
7. Karnal	3,721	13,22,826	Karnal
8. Kurukshetra	3,740	11,30,026	Kurukshetra
9. Mehendragarh	3,010	9,59,400	Narnaul
10. Rohtak	3,841	13,41,953	Rohtak
11. Sirsa	4,276	7,07,068	Sirsa
12. Sonipat	2,206	8,46,765	Sonipat

HIMACHAL PRADESH

Area: 55,673 sq km
Population: 42,80,818
Capital: Shimla
Principal languages: Hindi and Pahari

HISTORY AND GEOGRAPHY

The earliest known inhabitants of the region were a tribe called Dasas. Later the Aryans came and they assimilated the tribes. In the later centuries the hill chieftains accepted the suzerainty of the Mauryan Empire, the Kushans, the Guptas and the Kanauj rulers. During the Mughal period the Rajas of the hill states made some mutually agreed arrangements, which governed their relations. In the 19th century Ranjit Singh annexed or subjugated many of the states. When the British came, they defeated the Gurkhas and entered into treaties with some Rajas and annexed the kingdoms of the others. This situation remained more or less unchanged till 1947.

After independence 30 odd states of the area were united and the now known Himachal Pradesh was formed. At the same time some areas were merged into the Patiala and East Punjab States Union (PEPSU). With the reorganisation of Punjab on 1 November 1966, certain areas belonging to it were included in Himachal Pradesh. Subsequently Himachal Pradesh was made a full-fledged State.

The State is bordered by Jammu and Kashmir in the north, Punjab in the west and south-west, Haryana in the south, Uttar Pradesh in the south-east and by Tibet in the east.

AGRICULTURE

Agriculture and horticulture are the mainstay of Himachal Pradesh economy. About 76 per cent of the total working population is engaged in these occupations. Irrigated area forms about 16.95 per cent of the net sown area. The State is gifted with a variety of agro-climatic conditions. This makes it an ideal region for growing many kinds of fruits. Besides apples, plums, peaches and apricots are also grown. The climatic conditions are suitable for growing cash crops like potatoes, ginger and vegetables. Stress is being laid on the development of new crops like hops, olives, figs and mushrooms. Wheat, maize and rice are the major food crops.

Forests occupy 39 per cent of the area of the State. The main forest products include timber, fuelwood, gum and resin.

INDUSTRY

Gifted with vast natural resources, cheap power and labour, the State is gradually making steady progress towards industrialisation. The number of registered small scale units at the end of 1988 was over 18,500.

The major industries are Nahan foundry, Nahan resin and turpentine factories at Nahan and Bilaspur in the public sector and a brewery at Solan in the private sector. Himalaya Fertilisers Limited, another public sector undertaking, has started commercial production of NPK balanced granulated fertilisers. Besides, a television assembly plant at Solan Electronic Complex has started commercial manufacturing of TV sets. The Cement Corporation is running a cement plant. One of the biggest fruit processing plants in Asia at Parwanoo is in operation. An electronic complex is being set up at Shoghi near Shimla. In the small scale sector, microscopes, watch parts, clinical and industrial thermometres, hospital and heating equipment are being manufactured. The village industries are sheep rearing, wood carving, blacksmithy, spinning, weaving, leather tanning, pottery and bomboo craft.

Industrial areas have been established at Barotiwala, Nagrota, Mehatpur, Paonta-Sahib, Bilaspur, Shamshie, Solan, Parwanoo and Peo, industrial estates at Solan, Dharampur, Kangra, Jawali and Mehatpur.

Important minerals of the State are rock salt, slate, gypsum, limestone, baryte, dolomite and pyrite.

IRRIGATION AND POWER

Among the major projects, Giri and Andhra Hydel projects are in operation. Sanjay (Bhaba) Hydel project is likely to be commissioned shortly. Other power projects in hand are Bassi Augmentation project in Mandi district, Nathpa Jhakri project and Ghanvi Hydel project in Shimla district, Larji Hydel project, Gaj and Baner Hydel projects in Shimla district. Binwa Hydel project in Kangra district was commissioned in August 1984.

About 16,916 villages had been electrified by the end of March 1988.

TRANSPORT

Roads

The total length of roads in the State is 21,145 km. The national highway from Chandigarh runs through Shimla. Other main highways from Shimla serve Kulu, Manali, Kangra, Nahan, Chamba and Pathankot. The rest are minor roads. The other national highway passes through Bilaspur, Mandi, Kulu and Keylong. Recently, the Pathankot-Mandi road has also been declared a national highway.

Railways

There is a line from Kalka to Shimla and the Jammu-Delhi line runs through Pathankot. Nagal-Talwara rail link approved by the Central government is under construction. There is a narrow guage rail link between Pathankot and Joginder Nagar.

Aviation

The State has two airports at Bhuntar near Kulu and Jubbarhathi near Shimla. The third airport at Gaggal in Kangra district is likely to be commissioned shortly.

TOURIST CENTRES

Important tourist centres are: Shimla, Chail, Manali, Dalhousie and Dharamsala.

GOVERNMENT

Governor: Vice Admiral RKS Ghandhi
Chief Minister: Virbhadra Singh
Speaker: Smt Vidya Stokes
Chief Justice: NM Kashiwal
Chief Secretary: BC Negi

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. Bilaspur	1,167	2,47,368	Bilaspur
2. Chamba	6,528	3,11,147	Chamba
3. Hamirpur	1,118	3,17,751	Hamirpur
4. Kangra	5,739	9,90,758	Dharamsala
5. Kinnaur	6,401	59,547	Kalpa
6. Kulu	5,503	2,38,734	Kulu
7. Lahul and Spiti	13,835	32,100	Keylong
8. Mandi	3,950	6,44,827	Mandi
9. Shimla	5,131	5,10,932	Shimla
10. Sirmur	2,825	3,06,952	Nahan
11. Solan	1,936	3,03,280	Solan
12. Una	1,540	3,17,422	Una

JAMMU AND KASHMIR

Area: 2,22,236[1] sq km	*Population*: 59,87,389[2]
Capital: Srinagar(Summer) Jammu (Winter)	*Principal languages*: Urdu, Kashmiri, Dogri, Pahari, Balti, Ladkhi, Punjabi, Gujri and Dadri.

HISTORY AND GEOGRAPHY

Legend in *Rajtarangni* and *Nilmat Purana* has it that the valley of Kashmir was once a large lake. According to it, Kashyap Rishi drained off the water, making it a place of abode. Geologists have their own theory to prove that geological changes made way for the outflow of water by subsidence of the mountain at Khadinayar, Baramula. Thus emerged the valley of Kashmir, the paradise on the earth.

Ashoka introduced Buddhism to Kashmir in the third century BC, which was later strengthened by Kanishka. The control of the valley passed on to the Huns in the early sixth century. The valley regained freedom in 530 AD but soon came under the rule of the Ujjain empire. On the decline of the Vikramaditya dynasty, the valley had its own rulers. There was a synthesis of Hindu and Buddhist cultures. Lalitaditya (697-738 AD), who extended his rule up to Bengal in the east, Konkan in the south, Turkistan in the north-west and Tibet in the north-east, was the most famous of Hindu rulers. Lalitaditya was famous for constructing buildings.

Islam came to Kashmir during 13th and 14th century AD. The Muslims now constitute majority in Kashmir. Zain-ul-Abedin (1417-69) was the most famous of the Muslim rulers, who came to Kashmir when the Hindu king Sinha Dev fled before the Tatar invasion. Later, Chaks overran Haider Shah, son of Zain-ul-Abedin and he continued to rule till 1587 when Akbar conquered Kashmir. In 1752 Kashmir passed on from the feeble control of Mughal emperor of the time to Ahmed Shah Abdali of Afghanistan. The valley was ruled by the Pathans for 67 years.

Jammu has also been mentioned in *Mahabharata* and two recent finds of Harappan remains and artifacts of Mauryan, Kushan and Gupta periods of Akhnoor have added new dimensions to its ancient character. The land of Jammu was divided into 22 hill principalities. Raja Maldev, one of the Dogra rulers conquered many territories to consolidate his kingdom. Raja Ranjit Dev ruled over Jammu from 1723 to 1783. His successors were weak and thus Maharaja Ranjit Singh annexed the territory to Punjab. He later handed over

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1. Includes 78, 114 sq km under illegal occupation of Pakistan, 5,180 sq km illegally handed over by Pakistan to China and 37,555 sq km under illegal occupation of China.
2. The population figure excludes population of areas under unlawful occupation of Pakistan and China where census could not be taken.

the Jammu Raj to Gulab Singh, a scion of the old Dogra ruling family, who had grown powerful among Ranjit Singh's governors and had annexed almost the whole Jammu region. The State was governed by the Dogra rulers until 1948, with the paramountancy resting up to 1947 in the British Crown's representative in India.

Jammu and Kashmir State is situated between 32° 17′ and 36° 58′ north latitude and 73° 26′ and 83° 30′ east longitude. Its boundaries extend to Russian Turkistan in north, Tibet in east, Punjab in south and Pakistan in west. Geographically the State can be divided into four zones. First, the submontane and semi-montane plain commonly known as *kandi* belt; the second, hills including Siwalik ranges; the third, mountains of Kashmir Valley and Sir Punjal range; and the fourth, Tibetan tract of Ladakh, Kargil, Gilgit and Skardu.

AGRICULTURE

About 80 per cent of the population of the State depends on agriculture. Paddy, wheat and maize are the major crops. Barley, *bajra,* and *jowar* are cultivated in some parts. Gram is grown in Ladakh.

The State has a forest area of 21,000 sq km comprising over 15 per cent of the total geographical area; excluding vast barrenness of Ladakh, the percentage of land under forest is over 51 per cent.

INDUSTRY

Handicrafts, being the traditional industry of the State, has been receiving top priority in view of its large employment potential and also demand of handicraft goods both within and outside the country. Handicraft production includes mainly papier-mache, wood carving, carpets, shawl making, embroidery, etc. This sector provides employment to more than two lakh persons. This industry particularly in carpets earns substantial foreign exchange. The production value of the handicrafts has increased to more than Rs 130 crore. About 73,000 persons have been imparted training in various trades under various schemes.

The Handloom Development Corporation is producing woollen items like export tweed, blazer, blankets, shawls, *dhussas, kani shawl,* etc.

In the small scale sector the number of units registered formally are of the order of 23,839 which have generated employment for about two lakh persons. In this sector the government has offered a package of incentives to attract unemployed youth to set up their units in the State.

IRRIGATION AND POWER

Irrigation and power sectors with an allocation of Rs 156.57 crore have claimed 34.8 per cent of the 1988-89 Annual Plan.

Salal and Stakna hydel projects were commissioned during 1987-88. About 100 villages were electrified during the year besides 1,515 hamlets and 695 *harijan bastis,* raising the total number of electrified villages to over 6,000 out of a total of 6,718 villages, and 5,100 villages have been provided tapped drinking water facilities till March 1988. Two grid stations were commissioned. Work on 16 mini and micro-hydel projects is also going apace. Three gas turbines are also being set up in the valley to overcome power shortage especially during winter.

A Hydro-Electric Power Corporation is proposed to be set up to mobilise resources for effective implementation of various power projects. Several other projects are being taken up in the Chenab basin, *viz.*, Dul Hasti, Savalkote and Bugliar. The total power generation in the State sector is 212 mw.

TRANSPORT

Roads

The State has about 10,260 kilometres of all categories of roads. The vehicular population in the State was about 72,830 at the end of March 1987.

Railways

At present rail system extends only up to Jammu. Work on Jammu-Udhampur railway line is in progress.

Aviation

Srinagar, Jammu and Leh are the major airports connecting Jammu and Kashmir with other parts of the country.

FESTIVALS

Janmashtami, the birth day of Lord Krishna is celebrated on the 8th day of dark fortnight of *Bhadon* (August-September). *Dussehra* or *Vijay Dashmi* on the 10th of the bright fortnight of *Assuj* is celebrated as the day of the victory of Rama over Ravana. *Shivratri* festival is also celebrated in Jammu and Kashmir. The four Muslim festivals celebrated in the State are *Id-ul-Fitr, Idu'z Zuha, Id-i-Milad-ul-Nabi* and *Miraj Alam.*

The *Hemis Gumpa* festival of Ladakh is internationally known, which comes off in the month of June. A special feature of the Hemis festival is its mask dance. In the Spituk monastery in Leh, the enormous statues of goddess Kali are exhibited once in the year on the occasion of the annual festival which falls in January. Other festivals celebrated are *Lohri,* marking the climax of winter; *Singh Sankranti,* observed in Rambon and the adjoining villages; *Tihar,* observed in Bhaderwah and Kishtwar in the month of *Chaitra,* etc.

TOURIST CENTRES

Kashmir valley is described as "the Paradise on Earth". Chashma Sahi Waterfalls. Shalimar Bagh, Dal Lake, etc., in Srinagar; Gulmarg, Pahalgaon, Vaishno Devi temple near Jammu etc., are the important tourist centres in Jammu and Kashmir.

GOVERNMENT

Governor: General KV Krishna Rao (Retd)
Chief Minister: Dr Farooq Abdullah

Speaker: Mirza Abdul Rashid
Chief Justice: Dr Adrash Sein Anand
Chief Secretary: M P Khosla

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. Anantnag	3,984	6,56,351	Anantnag
2. Badgam	1,371	3,67,262	Badgam
3. Baramula	4,588	6,70,142	Baramula
4. Doda	11,691	4,25,262	Doda
5. Jammu	3,097	9,43,395	Jammu
6. Kargil	14,036	65,992	Kargil
7. Kathua	2,651	3,69,123	Kathua
8. Kupwara	2,379	3,28,743	Kupwara
9. Ladakh	82,665[1]	68,380	Leh
10. Pulwama	1,398	4,04,078	Pulwama
11. Punch	1,674	2,24,197	Punch
12. Rajauri	2,630	3,02,500	Rajauri
13. Srinagar	2,228	7,08,328	Srinagar
14. Udhampur	4,550	4,53,636	Udhampur

[1] Includes 37,555 sq km under illegal occupation of China.

KARNATAKA

Area: 1,91,791 sq km
Population: 3,71,35,714
Capital: Bangalore
Principal language: Kannada

HISTORY AND GEOGRAPHY

Karnataka has written history of nearly 2,000 years. Apart from its being subjectd to the rule of the Nandas, Mauryas and the Satvahanas, Karnataka came to have indigenous dyasties like the Kadambas of Banavasi and the Gangas of Kolar from the middle of the 4th century AD. The Gomateshwara monolith at Shravanabelagola was installed by a Ganga minister. The Chalukyas of Badami (500 AD-753 AD) ruled over wider area, from the Narmada to the Cauvery from the days of Pulkeshin II (509-542 AD) who even defeated Harshavardhana of Kanauj. This dynasty created fine monuments at Badami, Aihole and Pattadakal, both structural and rock-cut. Aihole has been one of the 'cradles' of temple architecture. The Rashtrakutas (753-973 AD) of Malkhed who succeeded them levied tribute on the rulers of Kanauj successively in the so-called 'Age of Imperial Kanauj'. Kannada literature developed during this period. Outstanding Jain scholars of India lived in their court. The Chalukyas of Kalyana (973 to 1189 AD) and their later feudatories, the Hoysalas of Halebidu built fine temples, encouraged literature and fine arts. Noted jurist Vijnaneshwara (work: *Mitakshara*) lived at Kalyana. Great religious leader Basaveshwars was a minister at Kalyana. Vijayanagara Empire (1336-1646) fostered indigenous traditions and encouraged arts, religion and literature in Sanskrit, Kannada, Telugu and Tamil. Overseas trade flourished. The Bahmani Sultans (capital: Gulbarga, later Bidar) and the Bijapur Adilshahs raised fine Indo-Sersanic buildings and encouraged Urdu and Persian literature. The advent of the Europeans resulted in introduction of new crops (tobacco, maize, chillies, groundnut, potato etc.). After the fall of the Peshwa (1818) and Tipu (1799) Karnataka came under the British. Christian missionaries introduced English education and printing during the 19th century Revolution in transport, communication and industries was evidenced. Urban middle class emerged. Mysore dynasty helped industrialisation and cultural growth. Freedom movement was followed by the movement for unification of Karnataka. Belgaum Congress (1924) was presided over by Mahatma Gandhi. After independence, the new united Mysore State was created in 1956 and was re-named Karnataka in 1973.

Karnataka lies to the south of Goa and Maharashtra, to the west of Andhra Pradesh, to the north-west of Tamil Nadu and to the north of Kerala. It has a sea-coast of nearly 260 km (300 km with inundations). Almost parallel to the coast are the Sahyadri ranges of the Western Ghats, after a narrow coastal strip. Kudremukh is one of the tallest peaks here, 6,215 feet in height. These Ghats are the source of many east and west flowing rivers of Karnataka. They are covered by thick forests, rich in fauna and flora including teak and sandalwood. To the east of these ranges is the Deccan Plateau. Major parts of the State lie in this plateau, mostly being in rain shadow, and suffering from periodical droughts. Irrigation alone can sustain this region. The Ghats and the Tungabhadra valley are rich in iron ore. Many waterfalls in the Ghat region are harnessed for power.

AGRICULTURE

Karnataka is predominantly agricultural. About 76 per cent of the population lives in rural areas while about 71 per cent of its working force is engaged in agriculture and allied activities which generate about 49 per cent of the State's income. The net area sown was 1,01,72,192 hectares (1986-87) forming 53.39 per cent of the total area. The irrigation potential is about 28 per cent (1986-87). The major food crops are rice, *ragi*, *jowar*, maize, wheat, millets and pulses. The major cash crops are groundnut, sugarcane, cotton, mulberry, tobacco, coconut, arecanut, coffee, cashew, cardamom, tea, pepper and grapes. The State has first place in the per hectare coffee production.

The forest area is 30,57,030 hectares which forms 16 per cent (1986-87) of the geographical area of the State. Sandal wood, teak wood, rubber, bamboo, rose wood, various soft woods etc., are the forest products of the State. In case of forest products the State stands second in the value of forest products per hectare and also second in the country in total income from forests.

INDUSTRY AND MINERALS

Karnataka is one of the leading industrialised states in India. The public sector undertakings include Bharat Earth Movers, Bharat Electronics, Bharat Heavy Electricals, Hindustan Aeronautics Ltd., Hindustan Machine Tools, Indian Telephone Industries, Wheel and Axle Factory, New Government Electrical Factory and the Mangalore Chemicals and Fertilisers. There is a number of factories under the joint and private sectors and also small scale industries. Some of the manufactured items include aircraft, rail coaches, telephone instruments, electronic and telecommunication equipment, glass, batteries, spark plugs, lamps, wheel and axle, electric motors, textiles, silk, hosiery, sandal oil, electrical goods, porcelain, ceramics, sugar, paper, capacitors, mining-metal tools, cement, motorcycles, fertilisers, etc. The State-owned Visveswaraya Iron and Steel Ltd., Bhadravathi produces special steel, alloy steel, with a rated capacity of 77,000 tonnes per year. Another important project of the State is Kudremukh Iron Ore Project at Kudremukh, Chikmagalur district. Karnataka stands first in the production of electronic equipment. In fact Bangalore is known as the Electronic City of India. The State stands first in the production of raw silk (mostly multi-voltine) accounting to about 53 per cent (1987) of country's production and is famous in the world markets for its sandal soap and sandal wood oil.

The State is rich in mineral resources. The important minerals are high grade iron ore, copper, managanese, chromite, china clay, limestone and magnetite. The State has the pride of producing gold.

IRRIGATION AND POWER

Karnataka has the Godavari, Krishna, Cauvery, Palar and Pennar basins, mostly of east flowing rivers, for irrigation. Some west flowing rivers like the Kali and the Sharavathi are used for production of electricity. It is the first State in the country to generate electricity at Gokak Falls in 1887. The important power projects are Shivasamudra Hydro-Electric project (1901), Sharavathi Hydro-Electric project and the power project of the Kali river. The State has a thermal power station at Raichur with an installed capacity of 420 mw. The total installed power capacity of the State was 2,502 mw (1987) and the total energy generated was 841.5 crore watts in 1985-86. The number of electrified villages including hamlets was 32,458 at the end of March 1986 and pumpsets energised numbered 5,37,408.

TRANSPORT

Roads

Karnataka had 1,13,094 km (1987) of motorable roads including 1,968 km national highways.

Railways

Rail network in Karnataka was 2,938 km including broad guage, metre guage and narrow gauge in 1986-87.

Aviation

Bangalore, Belgaum and Mangalore are the main airports linking with the major cities of the country. Vayudoot service operates from Bangalore, Bellary, Mangalore and Mysore connecting other main cities of the southern parts.

Ports

New Mangalore port is the main seaport in Karnataka which mainly handles cargo vessels. Special facilities for export of Kudremukh iron ore were developed at this port. Karwar port is also being developed with the "Sea Bird" project of the Indian Navy coming up.

TOURIST CENTRES

The attractions in the State are Bangalore with its fine parks and industries; former princely capital Mysore with Brindavan Gardens and Srirangapattana (the capital of Tipu) nearby; Shravanabelagola where the famous monolithic statue of Gomateswara 57 feet high stands; Belur, Halebidu and Somanathapura with famous Hoysala monuments; Badami, Aihole and Pattadakal for the 1,300 year old rock-cut and structural temples; Hampi, the famous open air museum (ancient Vijayanagara); Gulbarga, Bidar and Bijapur, renowned for their Indo-Sersani monuments; Mangalore and Karwar for the ports and beaches; Gokarna, Udupi, Dharmasthala, Ganagapura and Saundatti, famous pilgrimage centres.

GOVERNMENT[1]

Governor: P Venkatasubbiah
Chairman: C Veeranna
Speaker: BG Banakar
Chief Justice: Rama Jois
Chief Secretary: KSN Murthy

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[1] President's rule was promulgated in Karnataka on 21 April 1989.

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. Bangalore	2,191	34,95,566	Bangalore[1]
2. Bangalore Rural	5,814	14,52,044	Bangalore
3. Belgaum	13,379	29,80,440	Belgaum
4. Bellary	9,885	14,89,225	Bellary
5. Bidar	5,448	9,95,691	Bidar
6. Bijapur	17,069	24,01,782	Bijapur
7. Chickmagalur	7,201	9,11,769	Chickmagalur
8. Chitradurga	10,852	17,77,499	Chitradurga
9. Dakshin Kannad	8,441	23,76,724	Mangalore
10. Dharwad	13,738	29,45,487	Dharwad
11. Gulbarga	16,224	20,80,643	Gulbarga
12. Hassan	6,814	13,57,014	Hassan
13. Kodagu	4,102	4,61,888	Mercara
14. Kolar	8,223	19,05,492	Kolar
15. Mandya	4,961	14,18,109	Mandya
16. Mysore	11,954	25,95,900	Mysore
17. Raichur	14,017	17,83,822	Raichur
18. Shimoga	10,553	16,56,731	Shimoga
19. Tumkur	10,598	19,77,854	Tumkur
20. Uttar Kannad	10,327	10,72,034	Karwar

[1] Bangalore district was bifurcated as Bangalore and Bangalore Rural districts on 15 August 1986.

KERALA

Area: 38,863 sq km
Population: 2,54,53,680
Capital: Trivandrum
Principal language: Malayalam

HISTORY AND GEOGRAPHY

To a large extent the ancient history of Kerala is shrouded in the mists of tradition. The most popular legend is that Kerala was raised from the depths of the ocean. Parasurama, one of the *avatars* of Vishnu had waged an epic series of vengeful war on the *kshatriyas*. Came a moment when Parasurama was struck by remorse at the wanton annihilation he had wrought. He offered severe penance atop the mountain heights. In a mood of profound atonement the sage heaved his mighty axe into the midst of the distant ocean. The waves foamed and frothed as a crescent-shaped stretch of land extending from Gokarnam to Kanyakumari surfaced from the depth of the sea. Legends apart, Kerala culture has been an integral part of the mainstream of Indian culture. Its history is the story of synthesis, assimilation and fusion of old traditions and new values in every sphere of human thought and activity.

The State covers an area of 38,863 sq km along the 590 km sun-drenched foam-washed coast line of the Arabian sea. It lies between north latitudes 8° 18′ and 12° 48′ and east longitudes 74° 52′ and 77° 22′. In between the high Western Ghats on the east and the Arabian sea on the west the width of the State varies from 35 km to 120 km. According to the geographical features, the State can be divided into hills and valleys, the midland plains and the coastal belt. There are 41 west flowing big and small rivers originating from the Western Ghats and flowing towards Arabian sea. Three tributaries of River Cauveri originate in Kerala and flow east towards the neighbouring states.

AGRICULTURE

Agriculture forms the mainstay of the people. About 42 per cent of the population depends upon agriculture for their livelihood. The area available for cultivation is about 74 per cent. Irrigated cropped area forms 12.71 per cent of the total cropped area. The unique feature of Kerala's agriculture is the predominance of cash crops. Kerala is the major producer of coconut, rubber, pepper, cardamom, cocoa, cashew, arecanut, sugarcane, coffee, tea, ginger, etc. Tree spices like nutmeg, cinnamon, cloves, etc., are also cultivated. Rice and tapioca are the important food crops. The climatic condition and fertility of the soil are ideal for paddy cultivation. Coconut is the most important cash crop of Kerala occupying 30 per cent of net cultivated area. The State contributes almost the entire production of tree spices in the country. Among the spices, pepper is the most important, earning maximum foreign exchange. Tapioca is a tuber, introduced as a cultivating crop and it is a poor man's menu. Many varieties of fruit crops are also grown in the State which serve as a subsidiary food of the people. Banana, pineapple, mango and jackfruit are the major fruit crops. Rubber, tea, coffee and cardamom are the major plantation crops. Kerala is abundant in forest wealth which consists of some well known varieties of timber, such as teak, black wood, ebony, soft wood and rose wood.

Kerala contributes a major share of sea-fish production in the country. Besides, it earns valuable foreign exchange also. The fish wealth is estimated to be about 12 lakh tonnes. Prawns, oil sardine, mackerel and shrimp are the main products of export.

INDUSTRY

Kerala is rich in industrial potentialities and infrastructure facilities such as hydro-electric power, rich forests, rare minerals like ilmenite and monozite and efficient system of transport and communications. Traditional industries are handloom, cashew, coir and handicrafts. Other important industries are rubber, tea, ceramics, electric and electronic appliances, telephone cables, transformers, bricks and tiles, drugs and chemicals, general engineering, plywood splints and veneers, beedi and cigar, soaps, oils, fertilisers, khadi and village industry products. A number of manufacturing units have also sprung up for the production of precision instruments, machine tools, petroleum and petroleum products, paints, pulp, paper, newsprint, glass and non-ferrous metals. Principal export products are cashewnut, tea, coffee, spices, lemongrass oil, sea foods, rose wood and coir. The State has abundance of important minerals like ilmenite, rutile, monazite, zircon, sillimanite, clay and quartz sand.

IRRIGATION AND POWER

Major irrigation projects are Chalakkudy, Peechi, Malampuzha, Neyyar, Pothundy, Gayatri, Walayar, Vazhani, Mangalam and Cheerakuzhy. Besides, Kallada, Pampa and Periyar Valley schemes have also been commissioned. Of this Kallada irrigation scheme was completed by mobilising mass voluntary labour. This scheme is the largest of its kind to benefit about one lakh hectares of land. Important power projects are entirely hydro-based. They have an installed capacity of 1,476.5 mw and annual energy generation potential of 5,270 MU. Heavy rainfall and a large number of swift flowing rivers provide considerable potential for power generation. Important power projects are Panniyar, Sholayar, Sabarigiri, Sengulam, Peringalkuth, Neriamangalam, Idukki, Pallivasal, Edamalayar and Kuttiadi.

TRANSPORT

Kerala is comparatively well placed in the matter of transport.

Roads

The length of roads in the State is 1.01 lakh km. The national highways constitute 839 km. The State had 927 vehicles per 100 sq km and 1,340 vehicles per 1,00,000 people in 1985-86.

Railways

The railways have assumed significant importance. The State has a total railway network of 1,053 km and is now connected with almost all major places in rest of the country.

Aviation

There are three airports at Trivandrum, Cochin and Calicut. Trivandrum is the international airport in the State.

Ports

The major port at Cochin plays a vital role in expanding foreign trade as well as coastal trade. There are 13 other minor ports and harbours.

FESTIVALS

Kerala is the home of many colourful festivals. Most of them have a religious flavour inspired by Hindu mythology. Almost every village has its own fairs and festivals and festivities. *Onam* is the most typical Kerala festival which has now earned an all-India character. It coincides with the harvest season and is an occasion of spontaneous revelry. Onam celebrates the home-coming of Mahabali, the legendary king, who ruled over Kerala in an age of plenty but was pushed down to infernal regions by Vishnu in the form of Vamana. It is now celebrated as a national festival under Government auspices. *Visu* is another festival celebrated on the astronomical New Year day. *Navarathri* is celebrated as *Saraswathi Pooja* in Kerala. *Mahasivarathri* is celebrated on the banks of Periyar river as a spectacular festival which is compared to *Kumbha Mela* of Prayag. The 41 day festival which coincides with the *Makaravilakku* in Sabarimala Ayyappan Temple attracts lakhs of people from India and abroad. The *vallamkali* or boat race is typical of Kerala, and except the Nehru Trophy Boat Race conducted in the Punnamada Lake, all the boat festivals have a religious origin. The Vadakkunnatha Temple at Trichur celebrates *Pooram* festival in April every year with an impressive procession of caparisoned elephants and a display of pyrotechnics unparalleled. The main Christian festivals are Christmas and Easter. The Maramon convention held every year on the Pamba river bed is the biggest gathering of the Christians in Asia. The Muslims celebrate *Bakrid, Ramzan* and *Muharram.* Apart from this they have *Jarram* and *Nercha* festivals.

TOURIST CENTRES

Kerala has the most attractive wild life sanctuary at Thekkadi on the banks of river Periyar. Kovalam is an integrated sea-side resort. Padmanabhaswami Temple in Trivandrum is an exquisite specimen of south Indian architecture. Ponmudi is a famous hill station. Neyyar Dam is famous for its scenic beauty and Veli lagoon at the outskirts of Trivandrum with its boat club provides a chance for leisurely cruise. Other places of tourist interest are: Kaladi (birth place of Adi Sankara), Kasaragod (fort projecting on to the sea), Malampuzha (picturesque surroundings), etc.

GOVERNMENT

Governor: Smt Ram Dulari Sinha
Chief Minister EK Nayanar
Speaker: Varkala Radhakrishnan
Chief Justice: Vijayakumar Siddheshwaraswami Malimath
Chief Secretary: S Narayanaswami

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. Alleppey	1,883	25,50,145	Alleppey
2. Cannanore	4,958	28,03,467	Cannanore

District	Area (sq km)	Population	Headquarters
3. Ernakulam	2,408	25,35,294	Ernakulam
4. Idukki	5,061	9,71,636	Painavu
5. Kasaragod	NA	NA	Kasaragod
6. Kottayam	2,204	16,97,442	Kottayam
7. Kozhikode	2,345	22,45,265	Kozhikode
8. Malappuram	3,548	24,02,701	Malappuram
9. Palghat	4,480	20,44,399	Palghat
10. Pathanamthitta	NA	NA	Pathanamthitta
11. Quilon	4,620	28,13,650	Quilon
12. Trichur	3,032	24,39,543	Trichur
13. Trivandrum	2,192	25,96,112	Trivandrum
14. Wyanad	2,132	5,54,026	Kalpetta

MADHYA PRADESH

Area: 4,43,446 sq km	*Population*: 5,21,78,844
Capital: Bhopal	*Principal language*: Hindi

HISTORY AND GEOGRAPHY

Madhya Pradesh, which forms the Central India is associated with some famous names in Indian history. Emperor Ashoka began his career from Ujjain. The major portion of Central India formed part of the Gupta Empire (300-550 AD). In the first half of the seventh century it was part of the dominions of the famous Emperor Harsha. The close of the tenth century was a period of confusion. In the early eleventh century Muslims entered Central India, first Mahmud of Ghazni, and then Mohammad Ghori, who incorporated certain parts with the Sultanate of Delhi. It also formed part of the Mughal empire with the rise of the Marathas. Till the death of Madhoji Scindia in 1794 the Marathas ruled supreme in the Central India, but after that independent and smaller states came into being. The disintegrated smaller states paved the way for British suzerainty.

Madhya Pradesh is bounded on the north-west by Rajasthan, north by UP and north-east by Bihar, east by Orissa, south by Andhra Pradesh and Maharashtra and on the west by Gujarat.

AGRICULTURE

The economy of Madhya Pradesh is primarily agriculture-based. Nearly 80 per cent of the population lives in villages. Over 43.21 per cent of the land area is cultivable, of which 20.4 per cent is under irrigation. The Malwa region abounds in rich black cotton soil, the low lying areas of Gwalior, Bundelkhand, Baghelkhand and the Chhattisgarh plains have lighter soil, whereas the Narmada valley is formed of deep rich alluvial deposits. The main food crops are *jowar*, wheat and rice and coarse grains such as *kondo, kutki*, etc. Important among the commercial crops are oil seeds, cotton and sugarcane. The State is ranking first in production and area of soyabean, an important oil seed crop.

Forest cover in Madhya Pradesh is nearly 32 per cent (about 1.55 lakh square km). The forests are chiefly teak, *sal, saja, sala, baheda, harra, mahua*, etc. Forests contribute annual revenue of about Rs 327 crore to the exchequer besides providing *nistar* and grazing worth about Rs 100 crore and generating employment of about 13.80 crore mandays.

At present there are 11 national parks and 32 wild life sanctuaries spread over 17,542 sq km.

INDUSTRY AND MINERALS

Madhya Pradesh has entered into an era of high-tech industries like electronics, telecommunications, petro-chemicals, food processing and automobiles. Substantial progress was made in industries, based on raw material resources of the State, namely, soyabean and limestone. The State is leading in the soyabean oil processing and manufacture of cement. The State government has announced a new Industrial Policy and Action Plan-1988, which covers encouragement for high-tech industries such as electronics, telecommunications, food processing, automobiles and for which higher incentives are being given

The major industries of the State are: the Steel Plant of Bhilai, the Bharat Heavy Electricals at Bhopal, the Bharat Aluminium Plant at Korba, the Security Paper Mill at Hoshangabad, the Currency Printing Press at Dewas, the Newsprint Mill at Nepanagar, Alkaloid factory at Neemuch. There are 24 cement factories in the State apart from the leather goods factory at Dewas, explosive factory, gun carriage factory and Post and Telegraph workshops, all in Jabalpur. There are in all 24 textile mills including spinning mills, eight of them are nationalised. There are 463 large and medium industries in production up to March 1989, with an investment of Rs 3,182.53 crore which provide employment to 2,39,400 persons.

Madhya Pradesh has now many mini steel plants, casting and forging units. Engineering industries of various types have come up in the eastern and western regions of the State. Fertiliser factory at Guna in the public sector is a new addition. Paper and pulp units, tyre and tube units, plywood and veneering, oxygen and acetylene gas, tungsten filament, single super phosphate, ACSR conductors, wire ropes, woollen products, caustic soda, electrodes, precision forgings, bicycles, rolling mills, telephone cables, craft paper, asbestos sheets and paper pipes, are some of the new additions in the industrial list of the State. The Raipur-Bhilai region has been developed as an engineering sector while Pithampur is a complex of automobiles and allied industries. State government has sanctioned 30 growth centres where all infrastructural facilities are being provided to the industries. During the Sixth Five Year Plan, the Central government had declared 18 districts of the State as 'No Industry Districts'. Out of these, medium and large scale industries have already come up in 16 districts. Only two districts, namely, Chhattarpur and Surguja are yet to have such units to be set up.

There were 2,52,375 small and village industries up to March 1989 in the State with an investment of Rs 656.2 crore and employment provision to 7,22,817 persons. Forty out of 45 districts in the State are categorised as industrially backward. The State is known for its traditional village handicrafts. Handloom weaved at Chanderi and Maheshwar are famous. Attractive handicrafts are made by the tribals of Bastar, Jabalpur, etc.

Madhya Pradesh occupies the second position among the mineral producing states in the country. In 1988-89, minerals worth Rs 1,284 crore were mined in the State, which is 22 per cent of the gross production value of all important minerals in the country. The State has monopoly in production of diamonds. It is rich in minerals such as, high grade limestone, dolomite, iron ore, manganese ore, copper, coal, rock phosphate and bauxite. An extensive programme has been undertaken to explore gold deposits in Raipur and Raigarh districts.

IRRIGATION AND POWER

The irrigation potential of the State created from all sources is around 39.2 lakh hectares which works out to about 20.4 per cent of net sown area at the end of the Sixth Plan (1980-85). There are seven major river systems in the State. During the Seventh Plan it is proposed to create an additional irrigation potential of 8.5 lakh hectares from all sources.

Twenty two major projects are in progress during the Seventh Plan, of which five are multi-purpose *viz.*, Rajghat, Bansagar, Mahanadi Reservoir, Hasdeo Bango and Bargi. Other major projects are: Tawa, Barna, Upper Wainganga, Bariyarpur Left Bank Canal, Urmil, Kolar, Sindh Phase I and II, Mahi, Mahan, Halali, Sukta, Pairi, Kodar, Jonk, Rangawan HLC and Thanwar. At present two major projects, 17 medium and 829 minor schemes estimated to cost Rs 708 crore and having irrigation potential of 4.65 lakh hectares are in progress to serve Tribal Sub-Plan areas.

TRANSPORT

Roads

The total length of roads in Madhya Pradesh is 1,13, 176 km of which 66,000 km is surfaced and 17,567 km road is unsurfaced. This includes 2,755 km of national highways.

Railways

The trunk rail route connecting the northern India passes through Madhya Pradesh. The main junctions in the State are Bhopal, Bilaspur, Bina, Gwalior, Indore, Itarsi, Jabalpur, Katni, Ratlam and Ujjain.

Aviation

Major airports linking Delhi, Bombay, Varanasi and Nagpur are Bhopal, Raipur, Indore, Khajuraho and Gwalior. Stations airlinked by Vayudoot are Bhopal, Khajuraho, Satna, Rewa, Guna, Indore, Bilaspur, Raipur, Jagdalpur and Jabalpur. Bhopal is also connected to Jaipur and Nagpur by Vayudoot.

FESTIVALS

The overwhelming majority of the population belongs to the Hindu religion. All important festivals, such as *Basant Panchami* (January-February) which marks the commencement of spring; *Shivaratri* (February-March); *Holi* (February-March), *Janmashtami* (August-September); *Dusserah* (September-October); Diwali (October-November), etc., are widely celebrated.

TOURIST CENTRES

The important tourist centres are Gwalior, Khajuraho, Sanchi, Vidisha, Udayeshwar, Udaigiri, Orchha, Sirpur, Ujjain, Amarkantak, Bedaghat, Marble Rocks—Jabalpur, Chanderi, Chitrakut waterfalls (Bastar District), Kotansar limestone caves (Bastar district), Deepadiha Temple Complex (Bilaspur district), Hinglajgarh Archaeological excavations (Mandsaur district), Bhopal Bhimbetka, Bhojpur, Mandu, Omkareshwar, Maheshwar and Pachmarhi, national parks at Kanha, Shivpuri, Bandhavgarh, Indrawati, Pench Valley, Panna (32 kms from Khajuraho).

GOVERNMENT

Governor: Smt Serla Grewal
Chief Minister: Motilal Vora
Speaker: Rajendra Prasad Shukla
Chief Justice: GG Sohani
Chief Secretary: RS Khanna

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. **Balaghat**	9,229	11,47,810	**Balaghat**
2. **Bastar**	39,114	18,42,854	**Jagdalpur**
3. **Betul**	10,043	9,25,387	**Betul**
4. **Bhind**	4,459	9,73,816	**Bhind**
5. **Bhopal**	2,772	8,94,739	**Bhopal**
6. **Bilaspur**	19,897	29,53,366	**Bilaspur**
7. **Chhatarpur**	8,687	8,86,660	**Chhatarpur**
8. **Chhindwara**	11,815	12,33,131	**Chhindwara**
9. **Damoh**	7,306	7,21,453	**Damoh**
10. **Datia**	2,038	3,11,893	**Datia**

District	Area (sq km)	Population	Headquarters
11. Dewas	7,020	7,95,309	Dewas
12. Dhar	8,153	10,57,469	Dhar
13. Durg	8,537	18,90,467	Durg
14. East Nimar (Khandwa)	10,779	11,53,580	Khandwa
15. Guna	11,065	10,01,985	Guna
16. Gwalior	5,214	11,07,879	Gwalior
17. Hoshangabad	10,037	10,03,939	Hoshangabad
18. Indore	3,898	14,09,473	Indore
19. Jabalpur	10,160	21,98,743	Jabalpur
20. Jhabua	6,782	7,95,168	Jhabua
21. Mandla	13,269	10,37,394	Mandla
22. Mandsaur	9,791	12,93,399	Mandsaur
23. Morena	11,594	13,03,213	Morena
24. Narsimhapur	5,133	6,50,445	Narsimhapur
25. Panna	7,135	5,39,978	Panna
26. Raigarh	12,924	14,43,197	Raigarh
27. Raipur	21,258	30,79,476	Raipur
28. Raisen	8,466	7,10,542	Raisen
29. Rajgarh	6,154	8,01,384	Rajgarh
30. Raj Nandgaon	11,127	11,67,501	Raj Nandgaon
31. Ratlam	4,861	7,82,729	Ratlam
32. Rewa	6,314	12,07,583	Rewa
33. Sagar	10,252	13,23,132	Sagar
34 Satna	7,502	11,53,387	Satna
35. Sehore	6,578	6,57,381	Sehore
36. Seoni	8,758	8,09,713	Seoni
37. Shahdol	14,028	13,45,125	Shahdol
38. Shajapur	6,196	8,40,247	Shajapur
39. Shivpuri	10,278	8,65,930	Shivpuri
40. Sidhi	10,256	9,90,467	Sidhi
41. Surguja	22,337	16,33,476	Ambikapur
42. Tikamgarh	5,048	7,36,981	Tikamgarh
43. Ujjain	6,091	11,17,002	Ujjain
44. Vidisha	7,371	7,83,098	Vidisha
45. West Nimar (Khargone)	13,450	16,30,943	Khargone

MAHARASHTRA

Area: 3,07,690 sq km
Population: 6,27,84,171
Capital: Bombay
Principal language: Marathi

HISTORY AND GEOGRAPHY

Like other states, Maharashtra too has a past. steeped in legends, stories and myths. A clearer picture however, is available with the historic times. First prominent ruling dynasty was the Satvahanas, Vakatakas were another ruling family. This region came to be ruled by various powers like the Chalukyas, Yadavas, Khaljis of Delhi and Bahmanis after which the whole principality broke into smaller sultanates.

It was only in the 17th century with the arrival of Shivaji on the scene that the modern Maratha nationality came into being. Shivaji united the hitherto scattered forces and made a noble and glorious power which challenged the Mughal advances beyond the Deccan Plateau. As is usually the case with the monarchies, with Shivaji's death came the disintegration of the Marathas. After the failure of the descendents, the Peshwas seized power, which was only a brief respite. The final nail in the Maratha confederacy was driven at the third battle of Panipat in 1761.

It once again flared into prominence with Nana Saheb leading his soldiers in the revolt of 1857. But it too was squashed and the British took over even the last remnants of power. The freedom struggle once again united the people who under the leadership of Tilak and later Gandhi produced a Maratha Confederacy of a different sort. Maharashtra stood in the forefront of the freedom struggle till 1947 and after that is engaged in the task of nation building. The Reorganisation of States brought for the first time all the Marathi-speaking regions in one state of Maharashtra first by breaking up of old Central Provinces and Hyderabad and finally the bilingual Bombay.

Arabian sea guards the western boundary of Maharashtra while Gujarat and Madhya Pradesh are its neighbours on the northern side. Karnataka and Andhra Pradesh are on its southern side.

AGRICULTURE

About 70 per cent of the population in the State depends on agriculture. The net irrigated area (1987-88) was 18.3 lakh hectares. The gross irrigated area, however, increased by 38,000 to 23.8 lakh hectares in 1987-88, of which about 44 per cent was by surface irrigation. Principal crops grown in the State are rice, *jowar, bajra,* wheat and a variety of pulses. The State is an important producer of oil seeds. Groundnut, safflower, sunflower are the major oil seed crops. Important cash crops in the State are cotton, sugarcane, tobacco, turmeric and a variety of vegetables. The State is also producing fruits and has a substantial area of orchards of orange, banana, mango, grape, cashewnut, sweet lime, etc.

INDUSTRY

According to the latest available results of the Annual Survey of Industries 1984-85 carried out by the Government of India, covering the registered factory sector, Maharashtra continues to be in the leading position in the industrial scene in India. The State accounted for 22 and 23 per cent of gross value of output and of value added respectively in the organised industrial sector of the country. Ten years before, *i.e.,* in 1974-75, the State's share in gross value of output and value added in the country was 25 per cent each. The per capita value added in the State was the highest amongst all states in India. In the case of industrial employment in relation to population, Maharashtra was occupying the first position till 1981. In 1984 it ranked third in India, after Gujarat and Tamil Nadu.

The groups contributing substantially to the State's industrial production are chemicals and chemical products, textiles, electrical and non-electrical machinery and petroleum and allied products. Among food products, sugar is the most important. Other important industries are pharmaceuticals, engineering, machine tools, steel and iron castings and plasticware. It also leads in sophisticated electronic equipment. Santacruz Electronics Export Processing Zone is a free trade zone for cent per cent export of electric goods. The development of off-shore oil-fields at Bombay High and the nearby Basin North oil-fields marks an important event in the industrial development of the State.

IRRIGATION AND POWER

During the Plan years, *i.e.,* 1951 to 1980, nine major, 90 medium, 1,091 state sector minor irrigation and 340 lift irrigation projects were completed. During the Sixth Plan (1980-85) six major, 35 medium, 274 state sector minor irrigation and 15 lift irrigation projects had been completed. The cumulative potential created at the beginning of the Sixth Plan was 17.20 lakh hectares (including pre-Plan potential of 2.74 lakh hectares). Additional irrigation potential created during the Sixth Plan was 5.50 lakh hectares. Thus cumulative irrigation potential created till the end of the Sixth Plan, *i.e.,* June 1985 was 22.70 lakh hectares.

The derated capacity of the hydro, thermal, nuclear and gas turbine power stations in the State was 7,204 mw during 1986-87. In all 38,718 towns and villages were electrified and 13.06 lakh pumpsets energised as at the end of November 1988.

TRANSPORT

Roads

The total length of roads as on 31 March 1986 was 1,56,581 km—97,311 km surfaced and 59,262 km unsurfaced—including 2,939 km of national highway.

Railways

Maharashtra has approximately 5,419 km of railway route, out of which about 3,325 km are broad gauge. The main railway junctions are Bombay, Nagpur, Manmad, Akola, Pune and Sholapur.

Aviation

Bombay is one of the major international airports of the country. Besides, there are airports at Akola, Aurangabad, Kolhapur, Nagpur, Nanded,Ratnagiri and Sholapur. Vayudoot service links Bombay, Nagpur, Nanded, Pune, Ratnagiri and Sholapur with other important stations of India.

Ports

Bombay is a major port and it is the biggest among the major ports in India. A new port at Nhava Sheva off Bombay has been opened in 1989. There are 48 minor ports also in the State.

TOURIST CENTRES

Some of the important tourist centres are Ajanta, Ellora, Elephanta, Kanheri and Karla caves; Mahabaleshwar, Matheran and Panchagani—hill stations, and the religious places at Pandharpur, Nasik, Shirdi, Nanded, Aundhanagnath and Ganapatipule.

GOVERNMENT

Governor: K Brahmananda Reddy
Chief Minister: Sharad Pawar
*Chairman:*JS Tilak
Speaker: Shankarrao Jagtap
Chief Justice: Chittatosh Mokerji
Chief Secretary: DM Sukhtankar

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. Ahmadnagar	17,048	27,08,309	Ahmadnagar
2. Akola	10,575	18,26,952	Akola
3. Amravati	12,212	18,61,410	Amarvati
4. Aurangabad	9,172	15,88,031	Aurangabad
5. Bhandara	9,213	18,37,577	Bhandara
6. Beed	10,624	14,12,342	Beed
7. Bombay (Greater)	603	82,43,405	Bombay
8. Buldana	9,661	15,08,777	Buldana
9. Chandrapur	10,490	14,18,306	Chandrapur
10. Dhule	13,150	20,50,294	Dhule
11. Gadchizoli	15,443	6,37,336	Gadchizoli
12. Jalgaon	11,765	26,18,274	Jalgaon
13. Jalna	8,656	10,32,157	Jalna
14. Kolhapur	7,633	24,65,427	Kolhapur
15. Latur	7,304	12,93,530	Latur
16. Nagpur	9,931	25,88,811	Nagpur
17. Nanded	10,502	17,49,334	Nanded
18. Nasik	15,530	29,91,739	Nasik
19. Osmanabad	7,510	10,29,702	Osmanabad
20. Parbhani	11,038	16,42,610	Parbhani
21. Pune	15,642	41,64,470	Pune
22. Raigarh	7,148	14,86,452	Raigarh
23. Ratnagiri	8,249	13,79,635	Ratnagiri

District	Area (sq km)	Population	Headquarters
24. Sangli	8,572	18,31,212	Sangli
25. Satara	10,484	20,38,677	Satara
26. Sindudurg	5,219	7,72,559	Kudal
27. Sholapur	14,874	25,91,220	Sholapur
28. Thane	9,558	33,51,562	Thane
29. Wardha	6,310	9,26,618	Wardha
30. Yavatmal	13,584	17,37,423	Yavatmal

MANIPUR

Area: 22,327 sq km	*Population*: 14,20,953
Capital: Imphal	*Principal language*: Manipuri

HISTORY AND GEOGRAPHY

Not much of recorded history of Manipur is available. It is commonly known that an adventurer named Pakhangha ascended the throne of one of the seven main principalities and founded a long dynasty which ruled Manipur till 1949. A king named Loi Yamba in 1074 consolidated the kingdom to a great degree. In the later years Kabaws (who lived at the Indo-Burma border) tried to annex the south-eastern part of the Manipur valley, which was foiled by King Khumomba. By 1470, the Kabaw valley was annexed to Manipur. By 1542 the Manipur dominions were further extended. There was a battle with the Chinese in which the Manipuris signally defeated them.

The next 200 years, Manipur saw a steady prosperous time. In 1762 Manipur King concluded a treaty with the British to ward off the growing menace of Burmese. It is well known that the Burmese successes in Manipur, Assam and other places led to the war between Burmese and the British, which lasted seven years. The Treaty of Yandabo in 1826 ended the war but failed to solve the problem for the Manipuris. The British Government kept Manipur as a native state after much deliberations. After the integration with the Indian Union in 1949, the problem of Manipur did not end as it was made a part 'C' state. Central leadership was against its merger in Assam as was considered by the States Reorganisation Commission. Hence it became a Union Territory under the States Reorganisation Act, 1956. At the growing dissent of the people, Manipur was made a full-fledged state of the Union in 1972.

AGRICULTURE

The main occupation of 66 per cent of the population of Manipur is agriculture.

Nearly 92 per cent of the total land area is hilly and covered with forests. Reserve forest area covers 1,377 sq km while the protected forests spread in 4,171 sq kms. The state has made significant advancement in the field of agriculture. Coverage under high-yielding varieties has reached 70 per cent of the cropped area.

INDUSTRY

Handloom is the biggest industry in Manipur. There are about three lakh looms and an equal number of persons, especially females employed in it. Other main industrial units include: Manipur Spinning Mills, Khandsari Sugar Factory at Wangbal, TV assembling unit and a cycle assembling unit. In the small scale sector, there are about 5,970 units with approximately 23,800 persons employed in it.

IRRIGATION AND POWER

Seven projects have so far been taken up under major and medium irrigation programme. These are:— (1) Singda Multi-purpose, (2) Thoubal Multi-purpose, (3) Khuga Multi-purpose, (4) Loktak Lift Irrigation, (5) Khoupum Dam, (6) Imphal Barrage and (7) Sekmai Barrage projects. The Khoupum Dam has already been completed. The Loktak Lift Irrigation, Imphal Barrage and Sekmai Barrage projects are also being completed shortly. These seven projects, on completion, will give an ultimate annual irrigation benefit of 1,08,900 hectares with water supply and power component of 19 mgd and nine mw respectively. Annual irrigation potential to the extent of 52,700 hectares has been created by the end of 1986-87 and utilisation was of the order of 42,362 hectares.

TRANSPORT

Roads

National highways No 39 and 53 pass through Manipur for a distance of 431 kms. The State has a total of 5,464 km of roads, both metalled and unmetalled as on 31 March 1983.

Railways

No rail route exists in the State.

Aviation

Imphal is the only airport, which is linked with other stations in the region by Indian Airlines and Vayudoot services.

GOVERNMENT

Governor: Chintamani Panigrahi
Chief Minister: RK Jaichandra Singh
Speaker: Devendra Singh
Chief Secretary: PR Basu

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. Bishnupur	530	1,41,150	Bishnupur
2. Chandel	3,313	56,444	Chandel
3. Churachandpur	4,570	1,34,776	Churachandpur
4. Imphal	3,303	5,56,146	Imphal
5. Senapati	3,271	1,55,421	Senapati
6. Tamenglong	4,391	62,289	Tamenglong
7. Thoubal	405	2,31,781	Thoubal
8. Ukhrul	4,544	82,946	Ukhrul

MEGHALAYA

Area: 22,429 sq km

Capital: Shillong

Population: 13,35,891

Principal languages: Khasi, Garo and English.

HISTORY AND GEOGRAPHY

Apart from the account about the more important Khasi kingdoms including Jaintia and Khyrim in the chronicles of the Ahoms and Kacharis, little is known about the hill tribes of what is now Meghalaya, prior to the advent of the British. Their first contacts with the British dates to 1765 when the Khasis were organised into 25 principalities. About this time the Jaintia Kingdom of the Jaintia Hills had organised themselves politically. The troubles with Burma made it imperative for the British to negotiate a treaty of mutual assistance with both these territories. Similar was the case with the Garo Hills. Later on at the time of independence, these rulers and chieftains collectively signed the Treaty of Accession to the Union of India.

After 1947 the interest of the tribal people of these areas could not be overlooked. Tribal sub-committee was appointed to study the situation which culminated in the establishment of district councils for all hill districts of Assam. The district councils were given powers of legislation in matters pertaining to land, local administration, management of forests and such other matters. In the years that came, these councils failed in the all-round development of the people and a Hill State movement started which was even put before the States Reorganisation Commission in 1954. After being rejected by the Commission, an All Party Hill Leaders' Conference was formed in 1960 to augment their demand for a separate state peacefully. In 1968 by way of reconciliation Government conferred on the hill districts the status of an autonomous state, but within the Assam State. This failed to satisfay the people, but it ultimately led to the achievement of an autonomous state of Meghalaya in 1972.

Meghalaya is a land-locked territory bounded on the north by Gopalpur, Kamrup, Nowgong and Karby Anglong districts of Assam and on the east by the districts of Cachar and North Cachar hills also of Assam. On the south and west lies Bangladesh. It lies between 25° 1′ and 26° 5′ latitude and 85° 49′ and 92° 52′ longitude.

A number of rivers drain this mountainous State. In the Garo Hills, the Manda, the Damring and the Jinjiram flow towards the north while the Ringge and the Ganol flow to the west. Those that flow to the south are the Simsang which is the biggest river in Garo Hills and the Bhugi. In the Khasi and Jaintia Hills, the rivers that flow to the north include the Khri, the Umtrew, the Umiam, the Umkhen besides the Kupli on the border between Jaintia Hills and North Cachar Hills. The Kynshi, the Umiam Mawphlang and the Umngot flow to the south into Bangladesh.

AGRICULTURE

Meghalaya is basically an agricultural state. An overwhelming 83 per cent of the total population of the State depend primarily on agriculture for their livelihood. Of the total area of approximately 22.5 lakh hectares about 2.17 lakh hectares of the land is under field crops. The topography, physical features and land conditions as prevailing in the State provide extremely limited scope for extensive cultivation and bringing additional area under wet cultivation. Rice and maize are the major food crops grown throughout the State with appreciable improvement in yield. Wheat has been introduced recently and the result is quite encouraging. Potato, jute, mesta, cotton, mustard, arecanut, ginger, turmeric, betelvine, black pepper, bayleaves, etc., are some of the cash crops of the State. Orange, pineapple, banana, lemon, guava, *litchi,* jackfruits and temperate fruits such as plums, pears and peaches are some of the important horticultural crops grown in Meghalaya. Apart from above crops, the State has achieved signal success in the cultivation of tea, mushroom and tomato.

Meghalaya is rich in forests. The total forest area in the State is 8,51,000 hectares, with reserved forests 71,000 hectares, protected forests 1,000 hectares and other unclassed forests 7,79,000 hectares. The principal timber species are *sal, nahor, champa, chap, gomari, bhola* and pine. *Birch, Schima,* oak, *makria sal, beach* and magnolia are also found. The principal forest products are timber, bamboo, reeds, cane, ipecac, medicinal herbs and plants, cinnamon and lemon grass. Azaleas and rhododendrons grow wild in the forests of Khasi and Jaintia Hills and many kinds of beautiful orchids are found in the woods. Pitcher plants, the insect eating plant of botanical wonder is found in plenty in the West Khasi Hills District of Meghalaya and it is said that such plant is found nowhere else in the world.

INDUSTRY AND MINERALS

Mineral-based and forest-based industries are coming up. Plywood, beverages, lime making essential oils and chemical factories and other small industrial establishments like match splint factory, etc., have been set up. The public sector cement factory at Cherrapunji has been expanded to a production capacity of 930 tonnes of ordinary portland cement per day.

The mineral wealth of the Khasi Hills, Jaintia Hills and Garo Hills districts includes coal, sillimanite, limestone, dolomite, fireclay, felspar, quartz and glass sand. Ninetyfive per cent of India's total output of sillimanite is produced in the West Khasi Hills district. The Garo Hills district has deposits of coal, limestone, fireclay and light coloured sandstone. The total estimated reserves of coal in the State is of the order of 50 crore tonnes and that of limestone is around 400 crore tonnes.

IRRIGATION AND POWER

The State has many swift flowing rivers from which cheap hydro-electricity has been generated. There are at present four hydel projects with the installed capacity of 125.2 mw and a micro-hydel project with an installed capacity of 1.57 mw. There is also a diesel project of 1.95 mw.

TRANSPORT

Roads

Three national highways pass through the State for a distance of 461 km. The State had 5,139 km of both surfaced and unsurfaced roads in 1985-86.

Railways

The State is not connected by railway network.

Aviation

Shillong Airport at Umroi is the only airport in the State, linking it with other neighbouring states. Vayudoot services operate from here. A helicopter passenger service runs between Shillong, Guwahati and Tura.

FESTIVALS

Pomblang Nongkrem: This is one of the two important festivals of the Khasis. It is a five-day religious festival held annually as a thanks-giving to God Almighty for good harvest and to pray for peace and prosperity. All the people in general join in this dance festival, which is a rhythmic form of prayer for the well-being of all. This festival is celebrated at Smit village about 11 km from Shillong during October-November. *Shad Sukmynsiem:* This is another important festival of the Khasis. Shad Sukmynsiem means dance with a joyful heart. It is a thanks-giving dance. Maidens dressed in traditional fineries and men-folk in colourful costumes participate in the dance to the accompaniment of the drums and the flute. It is held in Shillong in the month of April every year. *Behdiengkhlam:* This is the most important festival of the Jaintias and is celebrated after the sowing is done. It is celebrated annually at Jowai Town usually in the month of July. Men only, young and old, take part in the dancing to the tune of the drums and flute. *Wangala:* This is the most important festival of the Garos. It is a harvest festival which lasts for several days. After harvesting in the field is over, the annual dance of joy and thanks-giving commences.

TOURIST CENTRES

Shillong, the capital city of the State has a number of beautiful spots. They are: The Ward's Lake, the Lady Hydary Park, the Polo ground, the Elephant Falls, the Shillong Peak overlooking the city and the green golf course, one of the best golf courses in the country.

Other important centres of tourist interest are: Umiam lake by the side of the main Guwahati-Shillong road; Cherrapunji, 1,290 metres above sea level, 53 kilometres from Shillong; Nohsngithiang falls popularly known as Mawsmai falls at Mawsmai village near Cherrapunji; the Mawsmai cave at Mawsmai village; hot spring of sulphur water at Jakrem; Ranikor, one of the best fishing spots. Other tourist centres include Mawysnram, Thadlaskein Lake, Nartiang in the Jaintia Hills, Siju, Balpakram, Tura Peak, etc.

GOVERNMENT

Governor: AA Rahim
Chief Minister: PA Sangma
Speaker: PG Marbaniang
Chief Secretary: V Ramakrishnan
A bench of the Guwahati High Court has been set up in Shillong. The jurisdiction of the Guwahati High Court extends over Meghalaya.

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. East Garo Hills	2,603	1,36,550	Williamnagar
2. East Khasi Hills	5,196	5,11,414	Shillong
3. Jaintia Hills	3,819	1,56,402	Jowai
4. West Garo Hills	5,564	3,69,877	Tura
5. West Khasi Hills	5,247	1,61,576	Nongstoin

MIZORAM

Area: 21,081 sq km	*Population*: 4,93,757
Capital: Aizawl	*Principal languages*: Mizo and English

AGRICULTURE

About 70 per cent of the people of Mizoram are engaged in agriculture. The main pattern of agriculture followed is *jhum* or shifting cultivation, and the area under jhum is little less than 39,000 hectares. Wet-rice cultivation covers an area of about 13,150 hectares. The total forest area is 15,935 sq km. Out of this, reserved and protected forest area is 7,835.65 sq km. The total area covered under various types of plantation is 76,985 hectares. Timber, bamboo, agor, etc., are the important forest products.

INDUSTRY

There is no major industry in Mizoram. Handloom and handicrafts are the cottage industries. Rice-milling, oil and flour-milling, mechanised carpentry workshops, saw-milling, brick making and furniture workshops are the small scale industries. One ginger-oil and oleoresin extraction plant has been established recently. The total production of raw silk during 1985-86 was 5,011 kg and production of cocoons during 1985-86 was 1,69,600.

IRRIGATION AND POWER

Potential created for irrigation till the end of Sixth Plan, *i.e.*, 1984-85 is 3,200 hectares. In 1985-86 it was 750 hectares; and in 1986-87—615 hectares. Additional potential of 4,455 hectares is expected to be created by the end of Seventh Plan. The total production of rice in 1985-86 was 49,000 mt and in 1986-87—52,000 mt. Estimated production during 1988-89 was 65,000 mt. Production of pulses in 1985-86 was 1,340 mt and in 1986-87 was 1,550 mt. Production of oil seeds in 1985-86 was 1,550 mt, in 1986-87 1,600 mt and in 1987-88 it was 1,700 mt.

The installed power capacity from diesel power stations is 7.55 mw and from grid power 6.5 mw. There are 21 diesel power stations and one grid power station. Two micro-hydel power projects are under construction and more are expected to be taken up from 1988-89. Micro-hydel projects already commissioned generate 1 mw of power.

TRANSPORT

Length of roads in the State is about 3,000 km, including 424 km national highways. Rail link has not been established with the State, but Aizawl is airlinked.

GOVERNMENT

Governor: Captain WA Sangma
Chief Minister: Lalthanhawla
Speaker: Hiphei
Chief Secretary: M Laamanzualla
Mizoram is within the jurisdiction of Guwahati High Court.

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. Aizawl	12,588	3,40,826	Aizawl
2. Chhimtuipui	3,957	66,420	Saiha
3. Lunglei	4,536	86,511	Lunglei

NAGALAND

Area: 16,579 sq km	*Population:* 7,74,930
Capital: Kohima	*Principal languages:* Ao, Konayak, Angami, Sema and Lotha

HISTORY AND GEOGRAPHY

Like all the territories of the north-eastern India, Nagaland too has its share of legends and stories. Nagas are basically tribal people, hence had no system of government. This situation changed in the 12th and 13th centuries when this territory was run over by the Ahom Kings. It was in the 19th century that there came a change in the history of Nagas when the British appeared on the scene. In fact, British used Nagaland to better manage the affairs of Assam, Manipur and Burma.

Nagaland did not remain untouched by the 1857 revolt and later in the struggle for freedom. After independence, in 1957 this territory was made a Centrally-administered area, administered by the Governor of Assam. This failed to quell the popular aspirations and unrest began. Hence in 1961 this was renamed as Nagaland and given the status of a state of the Indian Union, which was formally inaugurated in 1963.

Situated in extreme north-east, Nagaland is bounded in the west and north by Assam, east by Burma and south by Manipur.

AGRICULTURE

Agriculture is the main occupation of 90 per cent of the population of the State. Rice is the important foodgrain. The area under *jhum* cultivation is about 68,500 hectares and under terraced cultivation more than 51,250 hectares.

INDUSTRY

There is one sugar mill, one pulp and paper mill and one plywood factory in the State. A *khandsari* sugar mill was opened in February 1986. Handloom and agriculture are the important cottage industries. More than 3,100 units of small scale industries are in operation. There are 15 Cintronella grass farms. The minerals found in the State are clay, coal, glass, limestone and sand.

IRRIGATION AND POWER

Minor irrigation works are mostly meant to divert small hill streamlets to irrigate valleys used for rice cultivation. The number of electrified villages stood at 1,074 as in July 1988. Nagaland has achieved 100 per cent electrification of rural areas.

TRANSPORT

Roads
Road network consists of national, state, district and other roads with a total length of 6,331 km inclusive of 113 km of national highways.

Railways/Aviation
The only rail and air station in Nagaland is at Dimapur. Boeing service is available on every Sunday.

FESTIVALS

Some of the common festivals are *Ahunakuclue Pine* (first eating of the new rice), *Shinkusho* (eating and drinking), *Sakhrinyi, Moatsu* and *Tuluni* which have tribal origins and have been celebrated all along.

GOVERNMENT

Governor: Dr Gopal Singh
Chief Minister: SC Jamir
Speaker: TN Nughllie
Chief Secretary: Z Obed
Nagaland is within the jurisdiction of the Guwahati High Court. There is a Circuit Bench at Kohima.

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. Kohima	4,041	2,50,105	Kohima
2. Mokokchung.	1,615	1,04,193	Mokokchung
3. Mon*	1,786	78,938	Mon
4. Phek	2,026	70,618	Phek
5. Tuensang	4,228	1,52,332	Tuensang
6. Wokha	1,628	57,583	Wokha
7. Zumheboto	1,255	61,161	Zunheboto

ORISSA

Area: 1,55,707 sq km
Capital: Bhubaneshwar
Population: 2,63,70,271
Principal language: Oriya

HISTORY AND GEOGRAPHY

Orissa, the land of the Oriyas was known as Kalinga in the ancient days. In the third century BC (268 BC) Ashoka, the Mauryan emperor, sent a powerful force to conquer Kalinga which offered stubborn resistance. Kalinga was subdued but the carnage which followed, struck Ashoka with remorse. After the death of Ashoka, Kalinga regained its independence. In the second century BC, it became a powerful country under the ruler Kharvela. With the death of Kharvela, Orissa passed into obscurity. In the fourth century AD Samudragupta invaded Orissa which lay astride his path and overcame the resistance offered by five of its kings. In 610 AD Orissa came under the sway of King Sasanka. After Sasanka's death Harsha conquered Orissa.

Orissa had its own independent dynasty of rulers (the Ganga dynasty) in the 7th Century AD. In 795 AD Mahasivagupta Yajati II, came to the throne and with him began the most brilliant epoch in the history of Orissa. He united Kalinga, Kangoda, Utkala and Koshala in the imperial tradition of Kharvela. Under the kings of the Ganga dynasty, Orissa continued to flourish. Narashingha Dev of this dynasty is reputed to have built the unique Sun temple at Konark.

From the 14th century, Orissa was ruled successively by five Muslim kings till 1592, when Akbar annexed it to the Mughal empire. With the decline of the Mughals, the Marathas occupied Orissa. They continued to hold it till the British took over in 1803.

Orissa was made into a separate province in 1936. With independence, the princely states in and around Orissa, surrendered their sovereignty to the Government of India. By the States Merger (Governor's Provinces) Order 1949, the princely states of Orissa were completely merged with the State of Orissa on 19 August 1949.

Although the State of Orissa has many ancient names like Kalinga, Utkal and Udra, it is known to the outside of the State, more popularly, as the land of Lord Jagannath who is the presiding deity of Shree Kshetra or the Purusottama Kshetra. Jagannath is intimately connected with the social, cultural and religious life of Orissa. Hence the State's culture can be rightly summed up as the culture of Lord Jagannath. Orissan history established the fact that Buddhism, Jainism, Islam and Christianity had considerable impact on the people of Orissa in different periods.

The State of Orissa is situated in the north-eastern section of the Indian peninsula between 17°48′ and 22°34′ north latitude and 81°24′ and 87°28′ east longitude, slightly arched by the placid blue water of the Bay of Bengal on the east. Orissa is bounded on the north by Bihar, on the west by Madhya Pradesh, on the north-east by West Bengal and on the south by Andhra Pradesh. The territory of the State may be broadly divided into four distinct geographical regions, each with different characteristics, namely, northern plateau, the central river basin, the eastern hills and the coastal plains.

AGRICULTURE

The cultivation of rice is the principal occupation of nearly 76 per cent of the population of the State. In the year 1986-87 production of foodgrains was 73.99 lakh metric tonnes. Out of the gross cropped area 87.46 lakh hectares, 18.79 lakh hectares are irrigated and the Seventh Plan aims at achieving irrigation coverage of 20 lakh hectares. Rice, pulses, oil seeds, jute, mesta, sugarcane, coconut and turmeric are also important crops.

Forests cover about 42.7 per cent of the area of the State. Main forest products are *sal, teak, kangada, asan*, sandal wood, lac, tussar, silk, *kendu* leaves and medicinal plants like *Nux Vomica* and *Rewwelfia Surpentine* are available from certain forests. *Sal* seeds are available in abundance. *Kendu* leaf trade has been nationalised.

INDUSTRY

By the end of March 1988, 185 large and medium industries had gone into production while 31,674 small scale industries and 8,03,214 artisan-based industries were established in the State. The Seventh Plan aims at setting up more small scale industries and artisan-based units in the State.

The Central sector projects are the steel plant at Rourkela, sand complex at Chhatrapur, heavy water project at Talcher, the coach repairing workshop at Mancheswar, alluminium complex at Koraput, captive power plant at Talcher, fertiliser plant at Paradeep, Gandhamardan Mines project at Paikumal in Sambalpur district, etc.

The Industrial Development Corporation of Orissa is in charge of state sector projects such as properzi mill at Hirakud, spring pipe plant at Barbil, spinning mills at Sonepur, Baripada Textile Mills at Choudwar, Jharsuguda and Bargarh, slag cement plant at Bargarh, boiler piping and accessories plant at Chandaka, Hira Cement Works at Bargarh, Mailing Iron Works at Barbil, ferro-chrome plant at Jajpur Road, Hira Cable Works at Hirakud and Hirakud Industrial Works and Rerolling Mill at Hirakud, tile factory at Choudwar, the Project Construction Organisation at Bhubaneshwar, etc. The Industrial Promotion and Investment Corporation of Orissa plays a catalystic role in the development of large and medium scale industries in the State in the joint and private sector such as PVC-LPE complex at Baripada, ORICHEM at Talcher, Konark Jute Limited at Dhanmandal, Nicco Orissa Limited at Baripada, etc.

IRRIGATION AND POWER

Irrigation facilities in the State have expanded considerably since 1947. The Hirakud Dam Project on river Mahanadi started in 1949, was completed in 1957. This is the largest multi-purpose river valley project in the world with the Are objectives of power generation, flood control, navigation and irrigation. The Capita l installed capacity of power both hydel and thermal by the end of March, —8 was 1,394 mw. This will be increased greatly by the end of 1990 when the

Upper Kolab Multi-purpose Project, Indravati Hydro-electric Project and Rengali Dam Project will be completed. So far 27,811 villages have been electrified.

TRANSPORT

Roads

In 1984-85, length of roads was—state highways 2,846 km, national highway 1,625 km, other Public Works Department roads 61,330 and Council roads 5,048 km. There were 1,83,888 motor vehicles in 1984-85 and 81 km express way connected the Daitari Mining area with Paradeep.

Railways

The total length of the south-eastern Railway in 1984-85, was 1,982 km; 1,839 km broad guage and 143 km narrow gauge.

Aviation

There is an airport at Bhubaneshwar with regular scheduled services to New Delhi, Calcutta, Vishakhapatnam and Hyderabad.

Ports

Paradeep was declared a major port in 1966 and has been developed to handle four metric tonnes of traffic. Other minor ports are at Chandaballi and Gopalpur.

TOURIST CENTRES

Some of the tourist centres are: Bhubaneshwar—the city of temples, Puri, Konark, Cuttack, Lake Chilka, Similipal National Park, Barheipani waterfalls, Ushakothi wildlife sanctuary, Hirakud, Duduma waterfalls, etc.

GOVERNMENT

Governor: Prof Nurul Hassan
Chief Minister: JB Patnaik
Speaker: Prasanna Kumar Das
Chief Justice: Harilal Agrawal
Chief Secretary: RK Mishra

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. Bolangir	8,193	14,59,113	Bolangir
2. Balasore	6,311	22,52,808	Balasore
3. Cuttack	11,142	48,28,800	Cuttack
4. Dhenkanal	10,827	15,82,787	Dhenkanal

District	Area (sq km)	Population	Headquarters
5. Ganjam	12,531	26,69,899	Chhatrapur
6. Kalahandi	11,772	13,39,192	Bhawanipatna
7. Keonjhar	8,303	11,14,622	Keonjhar
8. Koraput	26,961	24,84,005	Koraput
9. Mayurbhanj	10,418	15,81,873	Baripada
10. Phubani	11,119	7,17,280	Phulbani
11. Puri	10,182	29,21,045	Puri
12. Sambalpur	17,516	22,80,976	Sambalpur
13. Sundargarh	9,712	13,37,371	Sundargarh

PUNJAB

Area: 50,362 sq km	*Population*: 1,67,88,915
Capital: Chandigarh	*Principal language*: Punjabi

HISTORY AND GEOGRAPHY

The ancient Punjab formed part of the vast Indo-Iranian region. In the later years to come it saw the rise and fall of various powers like Mauryans, Bactrian Greeks, Sakas, Kushans and Guptas. The medieval Punjab saw the supremacy of the Muslims. The first Muslim dynasty was followed by the Ghoris, the Slaves, the Khaljis, the Tughlaks, the Sayyids, the Lodhis and the Mughals.

Fifteenth and sixteenth centuries mark a period of watershed in the history of Punjab. The Bhakti Movement received a great impetus with the advent of Sikhism on the scene. *Prima facie* it was socio-religious movement which was more interested in fighting the evils in religion and society. But in the process of its evolution it was forced by the circumstances to acquire militancy. It was Guru Gobind Singh, the tenth guru who transformed the Sikhs into a militant sect and created the Khalsas. They rose to challenge and overthrow the Mughal empire in the north. In fact, it was the intolerance of the Mughal emperors which turned the peaceful Sikhs into a warring race.

Fighting the Mughals had become a regular compaign in the Sikh history. Guru Gobind Singh was succeeded by Banda Singh Bahadur and after his death in 1716 the political influence of the Sikhs dwindled and disappeared from Punjab. However, with the deterioration of the Mughals in Delhi, the Sikhs began the task of reorganising themselves and Misls—Confederacies came into existence. In one of the Misls was born Ranjit Singh who united all the other Confederacies and built a mighty Kingdom of the Sikhs. But soon after his death, the entire edifice collapsed on account of internal intrigues and British mechanisations. After the two abortive Anglo-Sikh wars, Punjab was finally annexed to the British empire in 1849.

Fight against the British rule had begun long before Gandhi's arrival on the scene. The revolt was expressed through religious movements of a revivalist or reformist character. First it was the Namdhari sect which believed in self-discipline and self-rule. Later on, it was Lala Lajpat Rai who played a leading role in the freedom movement.

Punjab's tale of woe did not culminate with the independence as it had to face the holocaust of partition along with displaced persons with harrowing memories. Besides their rehabilitation, there was the task of the reorganisation of the State. Eight princely states of East Punjab were grouped together to form one single state called PEPSU—Patiala and the East Punjab States Union with Patiala as its capital. The PEPSU state was merged with Punjab in 1956. The reorganised Punjab came into being in 1966.

Situated in the north-western corner of the country, Punjab is bounded on the west by Pakistan; on the north by Jammu and Kashmir; on the north-east by Himachal Pradesh and on the south by Haryana and Rajasthan.

AGRICULTURE

About 83.5 per cent of the total geographical area of Punjab is under cultivation. Three-fourth of population is engaged in agriculture. The State is surplus in foodgrains especially, wheat and rice. Other main foodgrains are maize, gram, barley and pulses.The production of foodgrains during 1987-88 was 170.22 lakh tonnes. Major cash crops are oilseeds, sugarcane, cotton and potato. Punjab having only 1.54 per cent geographical area of the country had contributed 56.0 per cent wheat and 77.9 per cent rice to the Central Pool during 1987-88 crop season.

In 1987-88 there was 2,67,644 hectares of forest land, of which 1,34,776 hectares belonged to Forest Department. It is approximately 5.31 per cent of the total area of the State.

INDUSTRY

The important industrial items produced in the State are bicycles, bicycle parts, sewing machines, hand-tools, machine tools, auto parts, electronic items, sports, surgical and leather goods, hosiery, knitwear, fastners, nut and bolts, textiles, sugar, vegetable oils, etc. On 31 March 1988 there were 1,35,305 small and village industrial units with an investment of Rs 937 crore. Besides, there were 369 large and medium units with an investment of over Rs 1,623 crore giving employment to more than 1,42,000 persons. Punjab State Industrial Development Corporation has promoted 57 projects till now with an investment of Rs 382 crore generating employment for about 31,000 persons.

IRRIGATION AND POWER

Important irrigation works implemented since 1947 are Bhakra Nangal Dam, Bhakra Canals, Harike Barrage with a new lined canal called Sirhind Feeder and remodelling of Madhopur Headworks into barrage. The Madhopur-Beas Link was constructed to transfer the surplus waters of Ravi to Beas. A similar project, the Sutlej-Beas Link Project, has been completed. The Pong Dam on Beas is an important hydro-electric project. The fourth unit of the Dam was commissioned in March 1979. The first power house comprising three units of the Mukerian Hydel Project was commissioned in October 1983. The first unit of stage-I of Ropar Thermal Plant was commissioned in September 1984 and second unit of stage-II was commissioned in March 1985. The first micro hydel project at Nidampur was commissioned in October-December 1986.

The total installed capacity in different fields of power development by 1987-88 was 2,661 mw. The State has already achieved cent per cent electrification in May 1976. For irrigation purposes 5,20,915 agriculture pumpsets have been energised up to 1987-88.

TRANSPORT

Roads

Surfaced road length on 31 March 1987 was 35,501 km and unsurfaced roads 10,711 km. Of the surfaced roads, national highway was 964 km.

Railways

The rail network in Punjab is extensive and up to 1986 the length of rail routes passing through the State was around 3,630.04 km. Rail communication with Pakistan also emanates from Punjab (Amritsar).

Aviation

There are airports at Amritsar, Bhatinda, Ludhiana, and Chandigarh.

TOURIST CENTRES

Some of the tourist centres are: Amritsar—the Golden Temple, Durgiana Mandir, Jallianwala Bagh, Anandpur Sahib, Bakhra Nangal, Jalandhar, Ludhiana, Pathankot, Patiala, etc.

GOVERNMENT[1]

Governor: Siddhartha Shankar Ray
Speaker : Surjit Singh Minhas
Chief Justice: V Ramaswami
Chief Secretary: R P Ojha

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. Amritsar	5,087	21,88,490	Amritsar
2. Bhatinda	5,551	13,04,604	Bhatinda

District	Area (sq km)	Population	Headquarters
3. Faridkot	5,740	14,36,228	Faridkot
4. Ferozpur	5,874	13,07,804	Ferozpur
5. Gurdaspur	3,562	15,13,435	Gurdaspur
6. Hoshiarpur	3,881	12,43,807	Hoshiarpur
7 Jalandhar	3,401	17,34,574	Jalandhar
8. Kapurthala	1,633	5,45,249	Kapurthala
9. Ludhiana	3,857	18,18,912	Ludhiana
10. Patiala	4,584	15,68,898	Patiala
11. Rupnagar	2,085	7,16,662	Rupnagar
12. Sangrur	5,107	14,10,250	Sangrur

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1. President's rule was promulgated in the State of Punjab on 11 May 1987

RAJASTHAN

Area: 3,42,239 sq km *Population:* 3,42,61,862
Capital: Jaipur *Principal languages:* Hindi and Rajasthani

HISTORY AND GEOGRAPHY

Rajasthan is the second largest state of India areawise. Prior to the independence the State was known as Rajputana or the home of the Rajputs—a martial community who ruled over this area for centuries.

The history of Rajasthan dates back to the pre-historic times. Around 3000 and 1000 BC it had a culture akin to that of Indus Valley civilisation. It was the Chauhans who dominated the Rajput affairs from seventh century, and by 12th century they had become an imperial power. After the Chauhans it was the gahlots of Mewar who controlled the destiny of the warring tribes. Besides Mewar. Other states also historically prominent were, namely, Marwar, Jaipur, Bundi, Kota, Bharatpur and Alwar. Other states were only the offshoots of these. All these states accepted the British Treaty of Subordinate Alliance in 1818 as it protected the interests of the princes. It naturally left the people discontented.

After the revolt of 1857 the people united themselves under the leadership of Mahatma Gandhi to contribute to the freedom movement. With the introduction of provincial autonomy in 1935 in British India, the agitation for civil liberties and political rights became stronger in Rajasthan. Though each state tried to put a stop to the rising agitation but it continued to grow powerful.

The process of uniting the scattered states commenced from 1948 to 1956 when the States Reorganisation Act was promulgated. First came the Matsya Union (1948) consisting of a fraction of states. Slowly and gradually other states merged with this Union. By 1949, major states like Bikaner, Jaipur, Jodhpur and Jaisalmer joined this Union making it a United States of Greater Rajasthan. Ultimately by 1956, the present State of Rajasthan formally came into being with Ajmer State, Abu Road Taluka and Sunel Tappa joining it.

The entire western flank of the State borders with Pakistan while the states of Punjab, Haryana, Uttar Pradesh and Madhya Pradesh abound Rajasthan in north, north-east, east and south-east and Gujarat in the south-west.

AGRICULTURE

Total cultivable area in the State is 266.06 lakh hectares, sown area 126.80 lakh hectares and irrigated area 38.63 lakh hectares. The estimated agricultural production was 75.93 lakh tonnes. The principal crops cultivated in the State are *jowar, bajra,* maize, gram, wheat, oilseeds, cotton, pulses, tobacco. Cultivation of vegetables and citrus fruits like orange and malta has also picked up in the State over the past few years. Commercial crops are red chillies, *methi, hina,* mustard and cuminseed.

INDUSTRY AND MINERALS

Major industries are textiles, rugged and woollen goods, sugar, cement, glass, sodium plants, oxygen and acetylene, vegetable dyes, pesticides, insecticides. zinc ingots and sheets, fertilisers, railway wagons, ball bearing, water and electric meters, sulphuric acid, television sets, synthetic yarn and insulating bricks, polished and unpolished precious and semi-precious stones, spirit and wine, etc. Besides, caustic soda, calcium carbide, nylon and tyre cords, etc., are also produced in the State. Important Central undertakings are zinc smelter plant, Dehari (Udaipur), copper plant (Khetri-Jhunjhunu), precision instrument factory (Kota). Small scale industrial units in the State numbered 1,35,350 with a capital investment of Rs 575 crore and employment potential of five lakh persons.

Rajasthan accounts for the entire output of zinc concentrates, emerald and garnet, gypsum—94 per cent, silver ore—76 per cent, asbestos—84 per cent, felspar—68 per cent and mica 12 per cent. The State has rich deposits of salt, rock phosphate, marble and red stone.

IRRIGATION AND POWER

The irrigation potential in the State had been raised to a level of 38.53 lakh hectares by the end of March 1988. The provision for irrigation in the Seventh Plan is Rs 517.86 crore, of which, Rs 135.18 crore was earmarked for the year 1987-88. The multi-purpose irrigation projects are: Thein Dam, Siddhmukh, Jakham, Bisalpur, Okhla-barrage, Gurgaon Canal, Beas, Nohar and Narmada. The medium irrigation projects are: Meja feeder, Bheem Sagar, Harish Chandra Sagar, Somkagdar, Som-Kamla-Amba, Panchana, Bandi, Sundra, Baman, Wagan diversion, Bassi, Kothari, Sawan-Bhadon, Kanota, Vilas, Chapi, Parawan and Gardada.

Besides generation of 460.3 crore units of power from its own resources, the State purchases 323.8 crore units of power from the neighbouring states to meet the requirement. The number of villages electrified and that of wells energised as on 31 March 1988 was 22,439 and 3,02,804 respectively. Efforts were also being made to exploit solar and wind power. More than 28,000 biogas plants were also installed in the State by the end of 1987-88.

TRANSPORT

Roads

Total length of roads is 53,040 km including 2,521 km of national highway.

Railways

Jodhpur, Jaipur, Udaipur, Ajmer, Bikaner, Kota and Bharatpur are the main rail junctions on broad gauge line linking Delhi and Bombay.

Aviation

Regular air services connect Jaipur, Jodhpur and Udaipur with Delhi and Bombay. Vayudoot service links Bikaner, Jaisalmer, Jodhpur and Kota.

FESTIVALS

Besides the national festivals of Holi, Deepawali, Vijayadashmi, Moharram, Christmas, etc., birth anniversaries of gods and goddesses, saintly figures and folk heroes and heroines are celebrated. Important fairs are *Teej, Gangaur* (Jaipur), Annual *Urs* of Ajmer Sherif and Galiakot, tribal *Kumbh* of Beneshwar (Dungarpur), *Mahaveer Fair* at Shri Mahaveer Sawai Madhopur, *Ramdevji Fair* (Ramdeora-Jaisalmer), *Gogaji Fair* (Gogamedi-Ganganagar), *Tejaji Fair* (Parbetsar-Nagaur), *Tanbh Shawrji Fair* (Mukam-Bikaner), *Kartik Poornima* and cattle fair (Pushkar-Ajmer), etc.

TOURIST CENTRES

Jaipur, Jodhpur, Udaipur, Bikaner, Mount Abu, Sariska Tiger sanctuary in Alwar, Keoladeo Bird Sanctuary, Bharatpur, Ramthambhore Tiger Sanctuary in Sawai Madhopur, Ajmer, Jaisalmer, Pali, Chittorgarh are the important places of tourist interest in the State.

GOVERNMENT

Governor : Sukh Dev Prasad
Chief Minister : Shiv Charan Mathur
Speaker : Girraj Prasad Tiwari
Chief Justice: MC Jain
Chief Secretary: VBL Mathur

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. Ajmer	8,481	14,40,366	Ajmer
2. Alwar	8,380	7,71,173	Alwar
3. Banswara	5,037	8,86,600	Banswara
4. Barmer	28,387	11,18,892	Barmer
5. Bharatpur	5,084	12,99,073	Bharatpur
6. Bhilwara	10,455	13,10,379	Bhilwara
7. Bikaner	27,244	8,48,749	Bikaner
8. Bundi	5,550	5,86,982	Bundi
9. Chittaurgarh	10,856	12,37,494	Chittaurgarh
10. Churu	16,830	11,79,466	Churu
11. Dholpur	3,009	5,85,059	Dholpur
12. Dungarpur	3,770	6,82,845	Dungarpur
13. Ganganagar	20,634	20,29,968	Ganganagar
14. Jaipur	14,068	34,20,574	Jaipur
15. Jaisalmer	38,401	2,43,082	Jaisalmer
16. Jalor	10,640	9,03,073	Jalor
17. Jhalawar	6,219	7,84,998	Jhalawar
18. Jhunjhunun	5,928	12,11,583	Jhunjhunun
19. Jodhpur	22,850	16,67,791	Jodhpur
20. Kota	12,436	15,59,784	Kota
21. Nagaur	17,718	16,28,669	Nagaur
22. Pali	12,387	12,74,504	Pali
23. Sawai Madhopur	10,527	15,35,870	Sawai Madhopur
24. Sikar	7,732	13,77,245	Sikar
25. Sirohi	5,136	5,42,049	Sirohi
26. Tonk	7,194	7,83,635	Tonk
27. Udaipur	17,279	23,56,959	Udaipur

SIKKIM

Area: 7,096 sq km	*Population*: 3,16,385
Capital: Gangtok	*Principal languages*: Lepcha, Bhutia, Nepali, Limbu and Hindi

HISTORY AND GEOGRAPHY

Very little is known about the early history of Sikkim. It is commonly believed that in 17th century Phuntsog Namgyal became the first ruler of the Namgyal dynasty which was ruling till Sikkim joined the Indian Union in 1975.

A mountain state in the eastern Himalayas, Sikkim is bounded on the west by

Nepal, on the north by Tibet, on the east by Bhutan and on the south by West Bengal.

AGRICULTURE

The State's economy is basically agrarian. Maize, rice, wheat, potato, large cardamom, ginger and orange are the principal crops. Sikkim has the largest area and the highest production of large cardamom in India. Ginger, potato, orange and off-season vegetables are other cash crops.

Since the area available for cultivation constitutes only 11 to 12 per cent of the total land utilisation in the State, the scope of increasing production through area expansion is limited. The thrust in agricultural development, therefore, has been to maximise productivity and net income per unit area. The emphasis, at present, is being given for the development of commercial and horticulture crops. Floriculture is being promoted. Intensive agriculture is being followed with adequate support of improved agricultural inputs.

INDUSTRY

Sikkim has been declared as industrially backward and the Department of Industries has launched a number of promotional schemes. In order to plan strategy to develop industrial climate in the State, 'No Industries District Survey Reports' have been prepared in respect of two of the four districts.

A multi-purpose Industrial Development and Investment Corporation has been established for accelerating industrial development in the State by providing financial assistance to small and medium scale industries and also by procuring scarce and controlled industrial raw materials for consumer units.

A number of industrial units have sprung up in the State. They produce fruit jam and juice, bakery products, beer, *vanaspati*, matches, washing soap, plastic goods, wrist watches, leather goods, electric cables, barbed wires and industrial jewels.

At the same time, consistent efforts have been made to promote and preserve the traditional arts and crafts such as wood carving, carpet weaving, *thanka* painting and *lepcha* weaving. A Government institute for cottage industries has been set up to look after these aspects.

IRRIGATION AND POWER

Since 1979 the State has implemented 65 new schemes and 134 renovation schemes bringing water to 15,106 hectares of land of which 8,650 hectares are being utilised.

Two small hydel schemes, Rongnichu Hydel Scheme Stage II and Rimbi Hydel Scheme Stage II have been completed. Further, the construction at Upper Rongnichu Hydel Project (8 mw) and Miyongchu (4 mw) hydel schemes is in full swing. Besides this, a new scheme called Kalez Khola Hydel Scheme (2 mw) near Dentam has also been taken up. Lachen Micro Hydel Scheme (100 kw) is ready for generation. All these power stations will meet the ever growing power requirements of the State.

TRANSPORT

Roads
The road length in the State is 1,202 km (metalled).

Railways
Railway link has not been made with the State. The nearest railway station is in Siliguri in West Bengal.

Aviation
There is no airport in Sikkim. Bagdogra airport in West Bengal caters to the State.

FESTIVALS

Bumchu festival is the most popular in Sikkim. It is held on the 15th day of the first month of the year coinciding with the full moon.

TOURIST CENTRES

Some of the important tourist centres are: Gangtok, Bakkhim—a natural garden, Yaksum—meeting of three great lamas, Dhubdi monastery, Tashiding Monastery, etc.

GOVERNMENT

Governor: SK Bhatnagar
Chief Minister : Nar Bahadur Bhandari
Speaker : Tulsi Ram Sharma
Acting Chief Justice: R Dayal
Chief Secretary: KC Pradhan

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. East District	954	1,38,762	Gangtok
2. North District	4,226	26,455	Mangan
3. South District	750	75,976	Namchi
4. West District	1,166	75,192	Gyalshing

TAMIL NADU

Area: 1,30,058 sq km	*Population*: 4,84,08,077
Capital: Madras	*Principal language:* Tamil

HISTORY AND GEOGRAPHY

Tamil Nadu has a hoary antiquity. Though early Sangam classics throw vague historical references, only from the Pallavas we pass to recorded history.

South India had remained under the hagemony of the Cholas, the Cheras and the Pandyas for centuries. The Pallavas held supremacy from about the second quarter of the fourth century AD. They were the originators of the famous Dravidian style of temple architecture. The last Pallava ruler was Aparajita, in whose reign the later Cholas under Vijayalaya and Aditya asserted themselves by about 10th century. At the end of the 11th century, Tamil Nadu was ruled by several dynasties like the Chalukyas, Cholas and Pandyas. In the two centuries that followed, the imperial Cholas gained paramountancy over South India. The Muslim gradually strengthened their position, which led to the establishment of the Bahmani Sultanate by the middle of the 14th century. At the same time, the Vijayanagar kingdom quickly consolidated itself and extended its sway over the whole of South India and at the close of the century, Vijayanagar became the supreme power in the South. However, it crumbled at the battle of Talikota in 1564, to the confederate forces of the Deccan Sultans.

Even during the period of the tumultuous confusion that followed the battle of Talikota, European commercial interests had appeared as rivals in the arena of South India. The Portuguese, the Dutch, the French and the English came in quick succession and established trading centres, known as 'factories'. The East India Company which had established their factory at Masulipatnam, now in Andhra Pradesh in 1611, gradually annexed territories by encouraging enmity among the native rulers. Tamil Nadu was one of the first of British settlements in India. The State is the successor to the old Madras Presidency which in 1901 covered the bulk of the southern peninsula. The composite Madras State, was later reorganised and the present Tamil Nadu was formed.

Tamil Nadu is bounded on the north by Andhra Pradesh and Karnataka, on the west by Kerala, on the east by the Bay of Bengal and on the south by the Indian Ocean.

AGRICULTURE

Agriculture is the mainstay of Tamil Nadu's economy. The total cultivated area is about 70.88 lakh hectares of which irrigated area is about 35.06 lakh hectares. The main food crops are rice, maize, *jowar bajra, ragi* and pulses. Important commercial crops are sugarcane, oilseeds, cotton, chillies, banana, coffee, tea and rubber.

Rice yield of 2.5 tonnes per hectare is among the highest in India. No state other than Tamil Nadu and Madhya Pradesh could so far cross the yield mark of one lakh kg of sugarcane per hectare. As in the case of groundnut production, the State stands next only to Orissa, producing 147 kg per hectare.

Forests cover an area of 22,316 sq km. Major forest products are timber, sandal wood, pulp wood and fuel wood. Minor forest products are bamboo, eucalyptus, rubber, tea (green leaves), cashew, honey, ivory, etc.

INDUSTRY AND MINERALS

Major industries are cotton textiles, chemical fertilisers, paper and its products, printing and allied industries, diesel engines, automobiles and its ancillaries, bicycles, cement, sugar, iron steel, railway wagons and coaches.

A number of public sector undertakings are located in the State. Important among them are the Neyveli Lignite Complex, the Integral Coach Factory, the High Pressure Boiler Plant, the Hindustan Teleprinters, Hindustan Photo Films, the Madras Refineries, the Madras Fertilisers, the Heavy Vehicles Factory and Pugalur Paper Factory.

Tamil Nadu accounts for nearly one fourth of the spinning capacity in India. One fifth of cement, caustic soda and nitrogeneous fertilisers and one tenth of the nation's production of sugar, bicycles and calcium carbide are produced in Tamil Nadu. It produces 60 per cent of safety matches and 77 per cent of finished leather goods in India.

Limestone, megnesite, mica, quartz, felspar, salt, bauxite, lignite and gypsum are some of the minerals found in the State.

The State is an important exporter of tanned skin and hides and leather goods, cotton piece goods and yarn, tea, coffee, spices, engineering goods, tobacco, handicrafts and black granites.

IRRIGATION AND POWER

Important irrigation schemes implemented since independence are the Lower Bhavani, the Amaravathi, the Vaigai, the Parambikulam-Aliyar, the Krishnagiri, the Sattanur, the Pullmbai-Kattalai High Level Canal, the Gomukhi Nadhi, Chittoor Pattannamkal and the Pennaniar schemes.

There are 21 hydro-electric stations, three thermal stations and one atomic station in the State. The atomic power plant at Kalpakkam in Chengalpattu district was commissioned in 1983.

TRANSPORT

Roads

The length of road network in Tamil Nadu is 1,45,524 km, including 1,771 km national highways.

Railways

Rail route consists of around 3,900 km. Main rail junctions in the State include Madras, Madurai, Salem, etc.

Aviation

Madras being the international airport in the southern region, is the main centre of airline routes. Besides, there are airports at Tiruchirapalli, Madurai having regular services to the important metropolitan cities in India. Coimbatore, Madras, Madurai and Thanjavur are also airlinked by Vayudoot services.

Ports

Major ports in the State are Madras and Tuticorin. Cuddalore and Nagapattinam are the lesser known ports in Tamil Nadu. There is an inland container depot to cater to the export traffic at Coimbatore, linked to Cochin port in Kerala.

FESTIVALS

Pongal is the main festival of Tamil Nanu. Celebrated for four days commencing from the last day of Margazhi (December-January), it is a festival of thanksgiving when the peasant worships the sun. the earth and the cattle for all their bounties. *Adipperukku:* in Tamil Nadu, tradition has it that in the month of Adi (July-August) the river Cauveri filled with gleaming water develops a desire for a variety of cooked food called *Chitrannam*. The popular belief is that any desire of a pregnant woman (known as *Dohada* in Sanskrit and *Masakkai* in Tamil) should be fulfilled at any cost lest she will give birth to a deformed child.

Panguni Utiram festival is celebrated in the month of Panguni (February) in almost all important Saivite temples of Tamil Nadu. The most spectacular aspect of the festival is the car (chariot) on which the idol of the presiding deity of the temple is seated drawn around the temple by the devotees. Festival of goddess Mariamman is celebrated in all the rural areas in the month of February-March and July-August.

The *Kanduri* festivals, one of the greatest festivals of Muslims in South India, are celebrated at the Nagore Dargah for ten days in September-October every year. For Roman Catholics, the festival at Velankanni every year is the most important.

TOURIST CENTRES

Udagamandalam (Ooty), Kodaikanal, Mamallapuram, Kanchipuram, Madurai, Rameshwaram, Kannyakumari, Thanjavur, Courtrallam, Pitchavaram, Poompuhar, Hoggenekal, wildlife sanctuaries such as Madumalai, Kalakad, Point Calimer, Annamalai, Vedanthangal Bird Sanctuary, Crocodile Farm, Snake Park, Guindy Deer Santuary, Vandaloor Zoo, etc., are some of the important tourist attractions in Tamil Nadu. Madras is perhaps the only city in the world which can boast of a wildlife sanctuary attached to it. The Marina Beach in Madras is the second longest in the world.

GOVERNMENT

Governor: Dr PC Alexander
Chief Minister: Dr M Karunanidhi
Speaker: P Doraisami
Chief Justice: S Mohan
Chief Secretary: MM Rajendran

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area in (sq km)	Population	Headquarters
1. Anna[1]	5,836	15,64,448	Dindugal
2. Chengalpattu	7,863	36,16,508	Kanchipuram
3. Coimbatore	7,469	30.60,184	Coimbatore
4. Dharmapuri	9,622	19,97,060	Dharmapuri
5. Kamarajar[1]	4,222	13,40,907	Viruthunagar
6. Kanniyakumari	1,684	14,23,399	Nagercoil
7. Madras	170	32,76,622	Madras
8. Madurai	6,558	29,71,489	Madurai
9. Nilgiri	2,549	6,30,169	Udagamandalam
10. North Arcot	12,268	44,14,324	Vellore
11 Pasumon Muthuramalingam[1]	4,137	9,72,756	Sivagangai
12. Periyar	8,209	20,68,462	Erode
13. Pudukkottai	4,661	11,56,813	Pudukkottai
14. Ramanathapuram	4,216	10,21,844	Ramanathapuram
15. Salem	8,650	34,41,717	Salem
16. South Arcot	10,895	42,01,869	Cuddalore
17. Thanjavur	8,280	40,63,545	Thanjavur
18. Tiruchirapalli	11,095	36,12,320	Tiruchirapalli
19. Tirunelveli Kattabomman	6,794	23,23,170	Tirunelveli
20. V O Chidambaranar[1]	4,635	13,50,581	Tuticorin

[1] These four new districts were formed after 1981 census.

TRIPURA

Area: 10,486 sq km	*Population:* 20,53,058
Capital: Agartala	*Principal languages:* Bengali, Kakborak and Manipuri

HISTORY AND GEOGRAPHY

The history of Tripura dates back even to the *Mahabharata,* the *Puranas* and the Pillar inscriptions of Emperor Ashoka. There are no historical records available of Tripura except *Rajmala* which is the chronicle of the kings of the ruling family of Tripura. According to it, the rulers were known by the surname 'Fa' meaning 'father'. There is a reference of rulers of Bengal helping Tripura kings in the fourteenth century. The kings of Tripura had to face frequent Mughal invasions with varying successes. They defeated the Mohammedan Sultans of Bengal in several battles.

Nineteenth century marked the beginning of the modern era in Tripura when

King Maharaja Birchandra Manikya Bahadur modelled his administrative set-up on the British Indian pattern and brought in various reforms. His successors ruled over Tripura till 1947 when it was annexed to the Indian Union. After independence it became a Part 'C' state and with the reorganisation of States in 1956, it became a Centrally-administered territory. In 1972, this territory attained the status of a full-fledged state along with Manipur and Meghalaya.

Tripura is strategically situated between the river valleys of Burma and Bangladesh. Encircled almost on three sides by Bangladesh, it is linked up with Assam only on the north-east.

AGRICULTURE

In Tripura, the principal crops are paddy, wheat, jute, mesta, potato, sugarcane and oilseeds. About 2.55 lakh hectares of net area is under agriculture. Overall production of foodgrains during 1986-87 was increased by 4.5 per cent over the production level of 3.74 lakh tonnes attained during 1985-86. The cropping intensity was 160.1 per cent during 1986-87.

In Tripura, there are 53 government orchard-cum-nurseries covering an area of 1,568 hectares stocked with quality mother plants. The present level of production of planting materials from these units is about 13.50 lakh number annually. There are 300 sales points for distribution of these planting materials and the entire requirement of the State is met out of it. Recently the North Eastern Regional Agricultural Marketing Corporation has set up one modern fruit juice concentrate plant at Nalkata in the State.

INDUSTRY

Tea is the major industry in Tripura. An area of 6,307 hectares was brought under tea cultivation by December 1985. The average prouction is 35 lakh kg tea per year. This industry has been employing about 10,000 workers. The Tea Development Corporation has been set up to promote development of tea industry in all spheres. The jute mill set up in public sector, produces about 20 tonnes of jute products a day. It employs about 2,000 workers. The major small scale industries which have been functioning in the State are aluminium, untensils, saw mill, steel furniture, carpentry, dry battery, pharmaceuticals, rice mill, washing soap, PVC pipes, tyre retreading, flour mill, aluminium conductors, leaden goods, polythene pipe, plywood, fruit canning, candle, oil mills, etc.

Handloom is the single largest industry in the State and weaving is essentially a tribal household industry. Nine pilot centres in different parts of the State impart training in improved techniques and producing quality handloom goods. The Tripura Handloom and Handicraft Development Corporation sells products of private weavers. An apex weavers' society caters to the needs of 77 registered primary weavers' cooperative societies. The organisation has been marketing products worth Rs one crore a year on an average. About 2,000 weavers have been getting benefits. The sericulture industry is also at developing stage in the State. Production of cocoons was 14,773 kg out of which mulberry was 13,393 kg and *eri* was 1,380 kg during 1987-88.

IRRIGATION AND POWER

The net irrigation potential created during 1979-80 was 30,873 hectares out of which 4,486 hectares from groundwater and 26,387 hectares from surface water sources. An additional area of 9,356 hectares was brought under irrigation during Sixth Plan period (1980-85) and thus the cumulative net irrigation potential created at the end of 1984-85 was 40,229 hectares of which 7,819 hectares by groundwater source and 32,410 hectares by surface water sources. During the first two years of Seventh Plan period, an additional area of 3,677 hectares was brought under irrigation and thus the cumulative net irrigation facilities available in the State were 43,906 hectares at the end of 1986-87. In Tripura, irrigation is mainly done through minor irrigation schemes such as lift irrigation, deep tubewells, seasonal bund, shallow tubewells, etc. There is no completed irrigation project. Only in the last year of the Fifth Five Year Plan, one medium irrigation project was taken up over river Gumti in South Tripura District. In the Sixth Five Year Plan, two more medium irrigation projects—one over river Khowai in West Tripura District and another over river Manu in North Tripura District have been taken up. On completion, these three medium irrigation projects will provide assured irrigation facilities to 13,199 hectares cultivable land.

The peak demand of power in the State which was 12.25 mw in 1980-81, rose to the level of 23 mw in 1984-85. It is expected that the peak demand would rise to the level of 50 mw by the end of Seventh Five Year Plan. This is proposed to be met from power generation of own sources based on hydro as well as gas thermal and also by import of power from Central sector power grid in north-eastern region. As regards the village electrification programmes, more than 2,432 villages have been electrified and nearly 1,115 pumpsets have been energised up to March 1987.

TRANSPORT

Roads

The road length in Tripura in 1979-80 was 4,105 km of which 1,244 km was surfaced roads and 2,861 km was unsurfaced roads. This position however changed in 1984-85, when the total length of surfaced and unsurfaced roads were 2,286 km and 3,367 km respectively. During the first two years of Seventh Five Year Plan, 445 km of old roads were improved and 250 km of new roads were constructed. Thus the total length of roads was 6,348 km of which 2,731 km was surfaced roads and 3,617 km was unsurfaced roads at the end of 1986-87.

Railways

Dharmanagar is linked by railway with Assam. The contruction of railway-line from Dharmanagar to Kumarghat in Tripura covering a distance of 33 km started in November 1979 and the section from Dharmanagar to Pecharthal covering a distance of 22 km had been completed in March 1986.

Aviation
The main airport having link with Calcutta and Guwahati is Agartala. Vayudoot services link besides Agartala, Kailashahar and Kamalpur also.

FESTIVALS

Of the many festivals, the worship of the fourteen gods particularly known as *Kharachi Puja* occupies the place of pride. It was during the reign of king Trilochana that the temple of fourteen deities was set up. This temple is situated at old Agartala about five miles away from the town. Every year in the month of July, a week-long celebration known as Kharachi Puja is held in the temple premises. *Ker and Garia Puja*: Ker Puja starts generally fifteen days after Kharachi Puja. It is said that this Puja is performed for the welfare of the State and its people. The tribals of Tripura perform Garia Puja on the seventh day of the month of Baishakh (April). *Ganga Puja*: Another remarkable tribal festival is Ganga Puja. This Puja is held in March-April. About 4 to 5 tribal villages join together to perform the puja for praying to God to save them from any epidemic disease. *Durga Puja:* This Puja is generally held during the month of October and is one of the most popular festivals in Tripura. *Diwali*: This comes next to Durga Puja. On this occasion, every year, a big fair is held near Matabari in the temple of Tripura Sundari at Udaipur, a sub-divisional town of Tripura. *Paus—Sankranti Mela*: This Mela at Tirtha Mukh in Amarpur sub-division attracts devotees even from distant parts of Tripura. *Ashokastami Fair*: This Fair is held at Unakoti Tirtha in Kailashahar sub-division every year in the spring. *Other Festivals*: *Doljatra* and *Rash-leela* are held with fun and fair. *Jhulan Jatra, Janmastami* and *Rathajatra* are some other festivals. Muslims of Tripura celebrate their festivals with great enthusiasm. Lord Buddha's birthday is also celebrated here.

TOURIST CENTRES

Important tourist centres are Nirmahal, Sipahijala, Dumboor Lake, Kamalasagar, Jumpui Hill, Unakoti and Matabari.

GOVERNMENT

Governor: Sultan Singh
Chief Minister: Sudhir Ranjan Majumdar
Speaker: Jyotirmoy Nath
Chief Secretary: I P Gupta
The jurisdiction of the Guwahati High Court extends over Tripura. A bench of Guwahati High Court is functioning at Agartala.

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. North Tripura	3,872	5,41,248	Kailashahar
2. South Tripura	3,581	5,35,558	Udaipur
3. West Tripura	3,033	9,76,252	Agartala

UTTAR PRADESH

Area: 2,94,411 sq km | *Population:* 11,08,62,013
Capital: Lucknow | *Principal language:* Hindi

HISTORY AND GEOGRAPHY

The history of Uttar Pradesh is very ancient and interesting. Although the State does not find mention in the *Rig Veda,* it is recognised in the later Vedic age as Brahmarshi Desa or Madhya Desa. Many of the great sages of the Vedic times like Bharadwaja, Yajanavalkya, Vasishta, Vishwamitra and Valmiki appear to have flourished in UP. Many sacred books of the Aryans were also composed here. *Varsha Purana,* for example, is associated with Mathura.

The two great epics of India, the *Ramayana* and the *Mahabharata,* appear to have been inspired by UP. The Ramayana features the royal family of Kosala and the Mahabharata centres around the royal family at Hastinapur, both in Uttar Pradesh.

In the 6th century BC, UP was associated with two new religions, Jainism and Buddhism. Mahavira, the founder of Jainism is said to have breathed his last at Doora in UP. It was at Saranath, again in UP, that the great Buddha preached his first sermon and laid the foundations of his order. In the past Buddhist period several centres in UP, like Ayodhya, Prayag, Varanasi and Mathura became reputed centres of learning. Sri Sankaracharya, the great Hindu reformer, established one of his *ashramas* at Badrinath in UP.

In the mediaeval period UP passed under Muslim rule and led the way to a new synthesis of Hindu and Islamic cultures. Ramananda and his Muslim disciple Kabir, Tulsidas and Birbal and many other intellectuals contributed to the growth of Hindi and Urdu languages. Urdu remains the perfect synthesis of Hindu and Muslim cultures.

Uttar Pradesh preserved its intellectual leadership even under the British administration. The British combined Agra and Oudh into one province and called it the United Provinces of Agra and Oudh. The name was shortened to United Provinces in 1935. After independence, in January 1950, the United Provinces was renamed as Uttar Pradesh.

Uttar Pradesh is bounded by Tibet and Nepal in the north, Himachal Pradesh in the north-west, Haryana in the west, Rajasthan in the south-west, Madhya Pradesh in the south and south-west and Bihar in the east. Uttar Pradesh can be divided in three distinct regions: (i) northern mountains, (ii) southern hills and plateau and (iii) the Gangetic plain.

AGRICULTURE

Agriculture is the main occupation of almost 78 per cent of the population of the State. Uttar Pradesh is the largest producer of foodgrains, sugarcane and oilseeds.

During the year 1987-88, the wheat production was 16,500 mt, rice 6,100 mt. The State is India's sugar bowl. Forests in UP cover about 51,32,887 hectares. In order to eradicate poverty and dacoity in Chambal valley, the State government commenced a programme to raclaim the ravines by soil conservation, afforestation, pasture development, etc.

INDUSTRY

Uttar Pradesh is one of the principal sugar producing states in the country. While the handloom is the largest cottage industry, cotton and woollen textiles, leather and footwear, distilleries and breweries, paper and chemicals, agricultural implements and glass products are some of the other flourishing industries.

A number of public sector undertakings have been set up in the State. These are the Bharat Heavy Electricals, Hardwar; the Indian Drug and Pharmaceuticals, Rishikesh; the Diesel Locomotive Factory, Varanasi; Fertiliser Factory at Gorakhpur and Allahabad; Singrauli Coal Fields, Singrauli; Modern Bakery, Kanpur; Bharat Pumps and Compressor, Naini; Indian Telephone Industries, Naini and Rae Bareli; the Triveni Structurals, Naini; the Deep Freeze Meat Plant, Tundla; the Hindustan Aeronautics, Lucknow; Transformer Factory, Jhansi; Uptron Capacitor Ltd., Lucknow; Uptron Digital System Ltd., Lucknow, and two cement factories at Churk Kajrahat and Dalla. There are also the Bharat Electronics Ltd., Ghaziabad; Scooters India Ltd., Lucknow, and Tannery and Footwear Corporation of India Ltd., Kanpur. The Artificial Limbs Manufacturing Corporation of India Ltd., Kanpur; Oil Refinery, Mathura, and Foundary Forge, Hardwar are other projects. Eleven spinning mills are running under State Textile Corporation.

The traditional handicrafts are silk fabrics, metalware, wood, ceramics, stone-work, dolls, artistic leather articles, papier mache, perfumery, bamboo products and musical instruments.

The minerals found in the State are limestone, dolomite, copper, gypsum, glass sand, marble, fireclay, coal, phosphorite, etc.

IRRIGATION AND POWER

The State has some of the oldest canal systems in the country, among which are the eastern Yamuna canal, the upper and lower Ganga canals, Agra, Betwa, Sarda, Dhassau and Ken canals. Important irrigation projects implemented since 1947 are Matatila dam, Obra hydel and thermal power stations, besides a number of small and medium irrigation projects. Yamuna and Tehri hydel projects are in progress.

Among the major irrigation projects under construction are Theri, Lakhwar Vyasi, Eastern Ganga canal, modernisation of upper Ganga canal, Narainpur Pump canal and Deohati Pump canal.

As on 1 April 1988 the installed capacity of power in Uttar Pradesh was 4,860.85 mw. As many as 75,749 villages and 43,528 *harijan bastis* was electrified and 5,64,412 private tubewells were energised up to March 1988.

TRANSPORT

Roads

There are 2,73,011 km of motorable roads, of which 66,034 km are metalled (this excludes forest roads). The number of on-road vehicles in UP was 10,79,751 up to March 1987.

Railways

Lucknow is the main junction of the northern network. Other important junctions are Agra, Kanpur, Allahabad and Varanasi.

Aviation

There are airports at Lucknow, Kanpur, Varanasi, Allahabad, Agra, Jhansi, Lalitpur and Gorakhpur.

FESTIVALS

The biggest congregation, perhaps of the world, *Kumbh Mela*, is held at Allahabad every twelfth year. Apart from Allahabad, Kumbh Mela is held at Hardwar and Vrindavan also every sixth year. Sanyasis and devotees from all parts of India come to have a dip on that holy occasion. In Allahabad there is a *Magh Mela* every winter in the month of March, when people come and settle there for a month to have a dip in the *Sangam* every morning. Among the other fairs is the *Jhoola* Fair of Mathura and Vrindavan that lasts a fortnight when idols are placed in gold and silver *jhoolas* or cradles. A dip in the Ganga on *Kartik Poornmasi* is supposed to be the holiest and there are big congregations at Garhmukteshwar, Soran, Rajghat, Kakora, Bithur, Kanpur, Allahabad, Varanasi and Hardwar. A very famous cattle fair is held at Bateswar in Agra district. Deva in Bara Banki district has become famous because of a Muslim Saint, Warish Shah.

Besides these, the important festivals of Hindus, Muslims, etc., are widely celebrated in the State.

TOURIST CENTRES

Uttar Pradesh has varied attractions to all kinds of tourists. Besides ancient places of pilgrimage like Varanasi, Vindhyachal, Ayodhya, Chitrakoot, Prayag, Naimisharanya, Mathura, Vrindavan, Hardwar, Rishikesh, Badrinath, Kedarnath, Gangotri, Yamnotri, Nanakmatta, Hemkund Sahib, Deva Sharif, Pearankliyar, Dargah of Shekh Saleam Chishti in Fatehpur Seakree, Sarnath, Shravasti, Kushinagar, Sandisa, Kampil, Piprahva and Kaushambi, the places Agra, Ayodhaya, Sarnath, Varanasi, Lucknow, Mathura, Prayag, Jhansi, Gorakhpur, Jaunpur, Kanauj, Mahoba, Devgarh, Bithur and Vindhyachal have rich treasures of Hindu and Islamic architecture and culture.

Uttar Pradesh has a treasure of magnificient scenic beauty spots like Sangam in Allahabad, Hindon (Ghaziabad) and Tanda waterfall in Mirzapur, Okhala, Dehra Dun, Mussoorie, Chakrata, Naini Tal, Raniket, Almora, Kausani, Pindari Glacier, Corbet National Park and Dhuwan Sanctuary.

GOVERNMENT

Governor: Mohammed Usman Arif
Chief Minister: ND Tiwari
Chairman: Virendra Bahadur Singh Chandel
Speaker: Niaz Hassan
Chief Justice: A Banerji
Chief Secretary: Shiromani Sharma

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. Agra	4,805	28,52,942	Agra
2. Aligarh	5,019	25,74,925	Aligarh
3. Allahabad	7,261	37,97,033	Allahabad
4. Almora	5,385	7,57,373	Almora
5. Azamgarh	5,740	35,44,130	Azamgarh
6. Bahraich	6,877	22,16,245	Bahraich
7. Ballia	3,189	19,45,376	Ballia
8. Banda	7,624	15,33,990	Banda
9. Bara Banki	4,401	19,92,074	Bara Banki
10. Bareilly	4,120	22,73,030	Bareilly
11. Basti	7,228	35,78,069	Basti
12. Bijnor	4,848	19,39,261	Bijnor
13. Budaun	5,168	19,71,946	Budaun
14. Bulandshahr	4,352	23,58,270	Bulandshahr
15. Chamoli	9,125	3,64,346	Chamoli
16. Dehra Dun	3,088	7,61,668	Dehra Dun
17. Deoria	5,445	34,96,564	Deoria
18 Etah	4,446	18,58,692	Etah
19. Etawah	4,326	17,42,651	Etawah
20. Faizabad	4,511	23,82,515	Faizabad
21. Farrukhabad	4,274	19,49,137	Fatehgarh
22. Fatehpur	4,152	15,72,421	Fatehpur

District	Area (sq km)	Population	Headquarters
23. Garhwal	5,440	6,37,877	Pauri
24. Ghaziabad	2,590	18,43,130	Ghaziabad
25. Ghazipur	3,337	19,44,669	Ghazipur
26. Gonda	7,352	28,34,562	Gonda
27. Gorakhpur	6,272	37,95,701	Gorakhpur
28. Hamirpur	7,165	11,94,168	Hamirpur
29. Hardoi	5,986	22,74,929	Hardoi
30. Jalaun	4,565	9,86,238	Orai
31. Jaunpur	4,038	25,32,734	Jaunpur
32. Jhansi	5,024	11,37,031	Jhansi
33. Kanpur (Rural)	5,848.8	20,08,731	Kanpur
34. Kanpur (Urban)	337.2	17,33,492	Kanpur
35. Kheri	7,680	19,52,680	Kheri
36. Lalitpur	5,039	5,77,648	Lalitpur
37. Lucknow	2,528	20,14,574	Lucknow
38. Mainpuri	4,343	17,26,202	Mainpuri
39. Mathura	3,811	15,60,447	Mathura
40. Meerut	3,911	27,67,246	Meerut
41. Mirzapur	11,310	20,39,149	Mirzapur
42. Moradabad	5,967	31,49,406	Moradabad
43. Muzaffarnagar	4,176	22,74,487	Muzaffarnagar
44. Naini Tal	6,794	11,36,523	Naini Tal
45. Pilibhit	3,499	10,08,312	Pilibhit
46. Pithoragarh	8,856	4,89,267	Pithoragarh
47. Pratapgarh	3,717	18,01,049	Pratapgarh
48. Rae Bareli	4,609	18,86,940	Rae Bareli
49. Rampur	2,367	11,78,621	Rampur
50. Saharanpur	5,595	26,73,561	Saharanpur
51. Shahjahanpur	4,575	16,47,664	Shahjahanpur
52. Sitapur	5,743	23,37,284	Sitapur
53. Sultanpur	4,436	20,42,778	Sultanpur
54. Tehri Garhwal	4,421	4,97,710	Narendranagar
55. Unnao	4,558	18,22,591	Unnao
56. Uttarkashi	8,016	1,90,948	Uttarkashi
57. Varanasi	5,091	37,01,006	Varanasi

WEST BENGAL

Area: 88,752 sq km	*Population:* 5,45,80,647
Capital: Calcutta	*Principal language:* Bengali

HISTORY AND GEOGRAPHY

Bengal finds a coveted place even in the pre-historic times. At the time of

Alexander's invasion a powerful kingdom called Gangaridai ruled over Bengal. The ascendancy of the Guptas and the Mauryas had somewhat little effect on Bengal. Later Shashanka became the King of Bengal and is said to have played important role in the north-eastern India in the early half of the 7th century. He was succeeded by Gopala who founded the Pala dynasty which ruled for centuries and had created a huge empire. The Palas were followed by the Sena dynasty which was ended by the Muslim rulers from Delhi. Bengal was ruled by various Muslim rulers and governors till the Mughal period in the sixteenth century.

After the Mughals the history of modern Bengal begins with the advent of European and the English trading companies. Battle of Plassey in 1757 changed the course of history when the English first gained a strong foothold in Bengal and India. In1905 it was partitioned to achieve some political returns but the people's growing movement in the auspices of Congress led to the reunion in 1911. This triggered off hectic movement for freedom which culminated with the independence in 1947 and partition.

After 1947, the merger of native settlements began which ended with its final reorganisation in 1956, when some Bengali speaking areas too were transferred to West Bengal.

The land frontiers of the State touch Bangladesh in the east and are separated from Nepal in the west. Bhutan lies in the north-east while Sikkim is in the north. On west and south-west are the states of Bihar and Orissa respectively. Bay of Bengal washes its southern frontiers.

AGRICULTURE

Agriculture contributes almost 50 per cent of the State's income and between 70 and 80 per cent of the State's population is directly or indirectly involved in agriculture. Total irrigated area stands between 30 and 35 per cent of the total cropped area (79,44,102 hectares). Despite weather constraints, the State occupied a leading position (*i.e.*, 12.5 per cent of the country's total production) among the 17 principal rice growing states in 1985-86. In 1986-87 productivity of rice was 3,030 kg per hectare, an all time record of the State. Even with very limited irrigation facilities, productivity of rice in the State during 1986-87 was above the national average. The area under rice cultivation in 1986-87 was 5,376 thousand hectares. The State accounted for 59.9 per cent of the country's jute (including mesta) in 1986-87, as per revised estimated and 24 per cent of tea production. Other important crops are potatoes, oilseeds, betelvine, tobacco, wheat, barley and maize.

INDUSTRY AND MINERALS

West Bengal was one of the major industrial states in the country with 8,064 registered working factories (excluding defence factories) in 1986. The number of registered small scale industrial units up to March 1987 was 2,49,120.

In addition to one alloy steel plant at Durgapur, there are two steel plants—

one, again, at Durgapur and other at Burnpur. Major industries among others, are engineering, automobiles, chemicals, pharmaceuticals, aluminium, ceramics, jute, cotton textiles, tea, paper, glass, leather, footwear, bonemeal, bicycle, dairy and poultry and timber processing. Central public sector undertakings including locomotive, cable, fertiliser, ship building and ordnance are located in the State. The State government has also set up some public sector undertakings like tea, sugar, chemicals, ceramic, electronics, leather, pharmaceuticals, petrochemicals and phyto-chemicals, agro-textile, sugarbeet, fruit and vegetable processing, electro-medical and other allied industries (including mineral development).

Total number of growth centres have gone up to 12 with the inclusion of Debgram and Raninagar (Jalpaiguri District), Bagdogra (Darjiling District) Bishnupur (Bankura District), Cooch Behar, Malda, nearly completed Uluberia (Howrah District), Free Trade Zone at Falta (South 24-Parganas District) and Kalyani—Phase II (Nadia District); besides establishment of new industrial estates at Asansol, Durgapur, Haldia, Kharagpur, Santaldih, Siliguri, Farakka, Haroa and Budge Budge.

Coal and china clay are two important minerals found in large quantity.

IRRIGATION AND POWER

Important multi-purpose irrigation and power schemes implemented since 1947 include, among others, the Damodar Valley Project, Mayurakshi Irrigation Project and Kangsabati Project. The works of the Teesta barrage, Mahananda barrage, Mahananda acquaduct and Teesta-Mahananda Main canals and link canals have already been completed. The Subarnarekha barrage project a new venture in the district of Midnapore, is being taken up during 1988-89. Twenty ongoing schemes of medium irrigation programme are being continued. The Hinlow Irrigation Scheme in Birbhum, Saharajore Scheme in Bankura, Taragoria and Turga Irrigation Schemes in Purulia district have also been completed. The foundation stone of the Bakreswar Thermal Power Project has already been laid down and some infrastructural works relating to the project are in progress. Power supply in West Bengal is currently done by the West Bengal State Electricity Board (WBSEB), West Bengal Power Development Corporation (WBPDC), Calcutta Electric Supply Corporation (CESC) and Durgapur Project Limited (DPL).

In the year 1986-87 total generating capacity of these agencies excluding the DVC, NTPC and NHPC, was 3,900 mu by WBSEB, 2,552 mu by CESC, 1,029 mu by DPL and 1,156 mu by the recently formed WBPDC. In addition to all these, WBSEB has gas turbines of 100 mw capacity, hydel units of 41 mw capacity and diesel units of 15.5 mw capacity. The total generating capacity from different sources in the State (excluding the DVC system) was 8,637 mu in 1986-87 against 7,883 mu in the preceding year.

The total installed (derated) capacity of electricity in West Bengal (including the DVC and NTPC) in 1987-88 stood at 3,616 mw (excluding 41 mw of CESC

Southern Generating Station) from 1,631 mw in 1977-78, *i.e.*, an increase of 1,985 mw.

With the extension of electricity in rural areas under the REC financing, it has been possible to extend electricity to 21,881 villages in 1986-87 from 10,981 villages in 1976-77, an increase of 49.81 per cent. The percentage of villages so far electrified has now risen to 57.47 per cent. The total number of pumpsets energised increased from 20,346 in 1977-78 to 52,398 in 1986-87, an increase of 64.22 per cent.

TRANSPORT

Roads

The length of roads is 57,001 km both surfaced and unsurfaced including 1,561 km of national highways.

Railways

The length of rail route in the State is approximately 3,800 km (as in 1984-1985). The main rail junctions are Howrah, Asansol, Kharagpur and New Jalpaiguri.

Aviation

Calcutta is an international airport and other airports are Belurghat, Cooch Behar and Malda.

Ports

Calcutta is the most important port followed by Haldia.

FESTIVALS

Durga Puja is the most important festival along with *Kali Puja* or *Diwali.* Along with it are *Vasant Panchami, Lakshmi Puja. Holi, Shivaratri, Janmashtmi, Id-ul-Zuha, Id-ul-Fitr, etc.*

TOURIST CENTRES

Important tourist centres are, among others, Calcutta. Digha (Midnapore), Bakkhali Sea Resort and Sundarbans (South 24-Parganas), Bendal, Tarkeswar, Kamarpukur, Hugli and Gadiara (Hugli), Santiniketan and Bakreswar (Birbhum), Durgapur (Bardhaman), Vishnupur (Bankura), Murshidabad, Gour and Pandua (Maldah), Darjiling, Mirik, Kalimpong, Sandukpa, Falut and Kurseong (Darjiling) and Jaldapara and Dooars (Jalpaiguri).

GOVERNMENT

Governor: TV Rajeswar
Chief Minister: Jyoti Basu
Speaker: Hasim Abdul Halim
Chief Justice: MN Roy
Chief Secretary: RN Sengupta

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. Bankura	6,882	23,74,815	Bankura
2. Barddhaman	7,024	48,35,388	Barddhaman
3. Birbhum	4,545	20,95,829	Suri
4. Calcutta[1]	187.33	41,25,006	Calcutta
5. Darjiling	3,149	10,24,269	Darjiling
6. Haora	1,467	29,66,861	Haora
7. Hugli	6,227	35,57,306	Chinsurah
8. Jalpaiguri	6,227	22,14,871	Jalpaiguri
9. Koch Bihar	3,387	12,71,643	Koch Bihar
10. Maldah	3,733	20,31,871	English Bazar
11. Medinipur	14,081	67,42,796	Midnapore
12. Murshidabad	5,324	36,97,552	Berhampore
13. Nadia	3,927	29,64,253	Krishnagar
14. North 24-Parganas[2]	14,052.67	99,19,439	Alipore
15. Purulia	6,259	18,53,801	Purulia
16. South 24-Parganas[2]	—	—	Barasat
17. West Dinajpur	5,358	20,04,947	Belurghat

1. Include three municipalities (Garden Reach with an area of 12.95 sq km. Suburban with 30.38 sq km and Jadavpur with 40 sq km).
2. Comparable data not available. The given data is for both the districts together

ANDAMAN AND NICOBAR ISLANDS

Area: 8,249 sq km
Capital: Port Blair

Population: 1,88,741
Principal languages: Hindi, Nicobarese, Malayalam, Bengali, Tamil and Telugu

HISTORY AND GEOGRAPHY

The original inhabitants live in the forests by hunting and fishing. They are of a small Negrito type and their civilisation is about that of the Stone Age. Main aboriginal tribes are Andamanese, Onges, Jarawas and Sentinelese. Besides, some displaced families from East Pakistan (now Bangladesh) had settled in the Islands in 1967.

Japanese forces occupied the Andaman and Nicobar Islands in 1942. The British re-occupied these Islands in 1945. From 1857 to 1942 the Islands were used by the British Government as a penal settlement for life and long-term convicts, but penal settlement was abolished on re-occupation in 1945.

The Andaman Islands lie in the Bay of Bengal, 193 km from Cape Negaris in Burma, 1,255 km from Calcutta and 1,190 km from Madras. Five islands grouped together are called the Great Andamans and to the south is the island of Little Andaman. There are some 204 islets, the two principal groups being the Ritchie Archipelago and the Labyrinth Islands. The Nicobar Islands are situated to the south of the Andamans, 121 km from Little Andaman. There are 19 islands, 7 uninhabited; the chief islands being Great Nicobar, Camotra with Noncowire and Car Nicobar.

AGRICULTURE

Paddy is the main food crop cultivated in Andaman group of islands whereas coconut and arecanut are the main cash crops of Nicobar group of islands. Other crops such as sugarcane, red oil palm, fruits and vegetables are also being cultivated in these islands.

Forests cover 7,130 sq km of the total area of the islands. All types of forests are found in the islands such as giant evergreens, hill top evergreens, moist deciduous, littoral and sub-mountain swamp forests. A large variety of timber is found in the Andaman group of islands. The most valuable timber is *padauk* and *gurjan*. These species are not found in Nicobars.

The water around the islands is rich in fish. Unlike the mainland, there is no traditional fishing community in the islands.

INDUSTRY

There are 466 small sacale and handicraft industrial units besides a few large-sized industrial units. The large scale units are wood-based located at Haddo and Chatham in Port Blair, Bambooflat in South Andaman, Bakultala and Long Island in Middle Andaman.

The products comprise sawn timber, commercial plywood, match splints and veneers. The small scale and handicraft units are engaged in shell crafts, furniture making, bakery products, rice milling, wheat grinding, oil seeds crushing, etc. Nine industrial training centres impart training to the local artisans and tribals in trades like cane and bamboo crafts, wood crafts, shell crafts and tailoring. Most of these centres are training-cum-production centres.

IRRIGATION AND POWER

As there is no perennial river, large scale irrigation projects are not possible in the islands. Minor irrigation schemes like tapping of rain water and utilising underground water resources are being taken up.

There are more than 20 power houses in the islands. The Phoenix Bay power house is the main source of power to Port Blair and nearby areas. Out of total 390 inhabited villages, 252 were electrified till January 1986.

TRANSPORT

The islands are accessible both by air and sea. Indian Airlines is operating four flights a week between Calcutta to Port Blair and also from Madras to Port Blair. Four ships are sailing between Port Blair and Calcutta/Madras/Vishakhapatnam with an interval of about ten days in respect of first two ports and once in three months in respect of last one. The Marine and Shipping Department keeps a good fleet of vessels to cater to the needs of inter-islands communications. Length of roads within the islands is 664 km including 81 km of unsurfaced roads.

TOURIST CENTRES

Important tourist centres are the Cellular Jail National Memorial, Anthropological and Marine Museums, Chatham Saw Mill, Carbyn's Cove Beach, Chinque Islands, Ross Islands, Wandoor, Chidyatapu, Madhuban and Mount Harriet.

GOVERNMENT

Lt Governor: Lt Gen TS Oberoi (Retd)
Chief Secretary: Gorakh Ram
The jurisdiction of Calcutta High Court extends over these islands.

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1. Andamans	6,408	1,58,287	Port Blair
2. Nicobars	1,841	30,454	Car Nicobar

CHANDIGARH

Area: 114 sq km	*Population*: 4,51,610
Capital: Chandigarh	*Principal languages*: Hindi and Punjabi

HISTORY AND GEOGRAPHY

Chandigarh and the area surrounding it were constituted as a union territory on 1 November 1966. It serves as the joint capital of both Punjab and Haryana states. It is bounded on the north and west by Punjab and east and south by Haryana.

AGRICULTURE

At present, cultivable land is about 2,819 hectares in the Union Territory of Chandigarh. The irrigated area is about 2,610 hectares. Wheat, maize and paddy are the major crops.

The forest covers 24.15 per cent of the area.

INDUSTRY

There are 15 large and medium scale units in Chandigarh out of which two are public undertakings. More than 2,470 units are registered under small scale industrial sector.

Large and medium scale units produce hosiery and knitting machine needles, wooltops, electric meters, cycle, free wheels and rims, antibiotics, soft drinks, card boards etc. Small scale units are engaged in the production of steel fabrication, door fittings, spun pipes, sanitary fittings, electronic components and equipment, cutlery, machine screws, bifurcated rivets, hardware, electrical appliances including washing machines, plastic shoes and other items, cotton ginning machine parts, utensils, paints and varnishes, radios and transistors, auto cables and domestic cables, thermometers, wire drawing and wire products, soap and chemicals, cement pipes and tiles, *dal* and oil mills, cycle tubes and tyres, electrical control switches and accessories, tractor parts, ropeways, helmets, sodium silicate, mining machinery parts, synthetic *newar*, textile weaving bandages, Ayurvedic drugs, electric chokes, lime, nuts, truck and three wheeler body makers, blocks, designs, chaff cutter blades, furniture, etc.

POWER

Chandigarh gets 3.5 per cent share of the total power generation from Bhakra complex. A standby arrangement to produce electricity to the extent of two megawatts is also available in case of major shutdowns.

All the 22 villages have been electrified and provided with street light.

TRANSPORT

Length of national highways is 24 km. Chandigarh is connected by train and air as well.

TOURIST CENTRES

Important centres are Rose Garden, Rock Garden, Shanti Kunj, Lake, Museum and Art Gallery, Capital Complex, National Gallery of Portraits.

GOVERNMENT

Administrator: SS Ray
Adviser to the Administrator: Ashok Pradhan

DADRA AND NAGAR HAVELI

Area: 491 sq km	*Population*: 1,03,676
Capital: Silvassa	*Principal languages*: Bhilli, Bhilodi, Gujarati and Hindi

HISTORY AND GEOGRAPHY

There were prolonged skirmishes between the Portuguese and the Marathas on the sea and later, on the basis of a treaty concluded between the Portuguese and Maratha government on 17 December 1779, the Maratha government assigned the aggregated revenue of Rs 12,000 in a few villages of this territory to the Portuguese on compensation and ensured friendship. The Portuguese started ruling this territory until its liberation by the people themselves on 2 August 1954. After the liberation of this territory by the people the administration was carried on for sometime by an Administrator appointed by the people themselves. The *Varishta panchayat* which is a representative body of the people of this territory passed a resolution on 3 August 1961 by which they decided to merge this territory with the Indian Union. Accordingly, this former Portuguese Territory was merged with the Indian Union and became a part and parcel of the Indian Union with effect from 11 August, 1961. Since then this territory is being administered by the Government of India as a union territory through the Administrator.

Dadra and Nagar Haveli is a small Union Territory with an area of 491 sq km. It is surrounded by Gujarat State and Maharashtra State. The Territory consists of two pockets namely Dadra and Nagar Haveli. There are in all 72 villages of which three villages are in Dadra. The nearest railway station is at Vapi about 18 km from Silvassa, the headquarters, of this UT. Silvassa is about 187 km from Bombay.

AGRICULTURE

Dadra and Nagar Haveli is a predominantly rural and tribal area. The total geographical area is 4,89,580 hectares, out of which about 24,000 hectares is under cultivation. The major crop is paddy (*kharif*). *Nagali* and other hill-millets are the second important crops of the area. Sugarcane is coming up slowly. Mango, *chiku, lichi* and apple are also produced.

Forests cover 40 per cent of the total geographical area of the Union Territory. Tribals who form 78 per cent of the total population lean heavily on forests. They have been given exclusive right for collection of minor forest products free of cost.

INDUSTRY

In this Territory there are no major industries. However, there are 286 industries which include cottage industries, village industries, small scale industries and 16 medium scale industries. The industrial products cover textile, engineering, plastics, electronics, chemicals, pharmaceuticals, etc.

Apart from the two industrial estates, one at Silvassa and the other at Masat, a new estate has come up at Khadoli.

IRRIGATION AND POWER

The annual rainfall in this Union Territory is about 2,500 mm which remains only for three months starting from the middle of June to middle of September. Due to hilly and undulating terrain, many areas are affected from heavy floods during monsoon. It is only after liberation that a scheme for irrigation and flood control was envisaged to make use of this water for useful purposes which on the one hand would provide irrigation to the large area and on the other control the flood situation in some areas. While the medium project Damanganga Dam will irrigate 8,280 hectares of area after its commissioning, the minor irrigation schemes set-up has already created a potential of 769 hectares. Besides the irrigation potential created by the other schemes like providing loan for irrigation wells is 1,222 hectares.

At present there are 16 minor projects like wells, open dug wells and check dams on which total 31 lift irrigation schemes are in operation.

Power is purchased from Gujarat State Electricity Board. The Territory is fully electrified.

TRANSPORT

The Union Territory does not have its own road transport system. It is availed of from the Gujarat State Transport and Maharashtra State Transport. The total road length is about 326 km of which 93 per cent is surfaced. Seventy eight per cent of the villages are connected with all-weather roads. The railway route from Bombay to Ahmadabad links Vapi also. Bombay is the nearest airport.

FESTIVALS

Normally all Hindu, Muslim and Christian festivals are celebrated in the Territory. However, the tribal celebration differs. The *Varli* and *Konkan* tribes celebrate *Diwali* in the name of *Barash*. *Akha Trij* is celebrated by the *Konkan* tribes, where ladies are the main participants. *Divasa* is celebrated by *Dhodia* and Varli tribes. The festival in place of *Raksha Bandhan* celebrated by the Dhodia tribe is *Narial Poornima*. Other festivals are *Bhowada*, amongst the Varli, Konkan and *Koli* tribes; *Khadi Puja* by all tribes after harvesting of crops, and *Gram Devi* before harvesting of crops.

GOVERNMENT

Administrator: Khurshid Alam Khan
The jurisdiction of Bombay High Court extends to the Territory.

DAMAN AND DIU

Area: 112 sq km	*Population*: 78,981
Capital: Daman	*Principal language*: Gujarati

HISTORY AND GEOGRAPHY

Daman and Diu along with Goa was a colony held by the Portuguese even after independence. In 1961, it was liberated from the Portuguese rule and made an integral part of India. It was part of the estwhile Union Territory of Goa, Daman and Diu. After cónferring statehood on Goa on 30 May 1987, Daman and Diu was made a separate Union Territory.

Daman lies in Gujarat State about 160 km north of Bombay. It is bounded on the north by the Bhagwan river, on the east by Gujarat State, Kalem river on the South and the west by the Gulf of Cambay. Diu is an island connected by a bridge near Tad village.

AGRICULTURE

Irrigated area is 1.19 per cent of the total cultivated area. The important field and garden crops grown are paddy, *ragi, bajra, jowar*, groundnut, pulses and beans, wheat, banana, sapota and mango.

There is no major forest in the Union Territory.

INDUSTRY

The total number of small scale units registered under the Small Scale Industries Development Organisation (SIDO) was 238 as in 1987 with an investment of around Rs 7.55 crore. These units manufacture such items as readymade garments, wooden furniture, paper board boxes and cones, polythene bags, rubber components, french polish, washing soap, crushing granite metal, RCC grills and poles, pumps, valves, filing cylinders, powering units, metal spectacle frames, stainless steel watch strips, job work of steel fabrication, etc.

IRRIGATION AND POWER

A number of minor irrigation schemes such as wells, tube wells, lift irrigation schemes, *bandharas*, tanks, etc., have been taken up.

The Damanganga project located in the neighbouring Union Territory of Dadra and Nagar Haveli provides irrigation facilities to Daman district. All the 21 villages in Daman and five in Diu are electrified.

TRANSPORT

There is no railway link with Daman and Diu. Vaydoot connects Daman with the main air stations in the western region.

GOVERNMENT

With the delinking of Daman and Diu from the erstwhile Union Territory of Goa Daman and Diu, from 30 May 1987, a new Union Territory of Daman and Diu has been formed and *Pradesh Council* has been constituted with the Administrator as the head of the Government.

Administrator: Khurshid Alam Khan
Chief Secretary: PP Srivastava

Presently, there is a common High Court for the States of Maharashtra and Goa, and for the union territories of Dadra and Nagar Haveli and Daman and Diu.

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

District	Area (sq km)	Population	Headquarters
1 Daman	72	48,560	Daman
2. Diu	40	30,421	Diu

DELHI

Area: 1,483 sq km	*Population:* 62,20,406
Capital: Delhi	*Principal languages:* Hindi, Punjabi, Urdu

HISTORY AND GEOGRAPHY

Delhi finds prominent reference in the pre-historic times, right from the epic *Mahabharata.* Later Delhi went on passing from one kingdom to another beginning with the Mauryans, Guptas, Palas of Central India, finally to the Chauhans in the 12th century. After them, it was the Afghan and the Muslim invaders for about four centuries, finally to the Mughals in the 16th century. In the later half of the 18th century and early 19th century, the British rule engulfed Delhi and in 1911 it was made the capital of the British India. In the freedom struggle too it was in the centre of all activities. After 1947 it became the capital of India and was made a Union Territory in 1956.

Lying in the northern part of the country Delhi is surrounded by Haryana on all sides except east where Uttar Pradesh touches it.

AGRICULTURE

Total cropped area had decreased from 91,757 hectares in 1984-85 to 81,377 hectares in 1986-87. Wheat, maize, *bajra* and *jowar* are major food crops. Emphasis has now shifted from food crop to vegetable and fruit crops, dairy, poultry farming etc. In the field of vegetable production, Delhi has made tremendous progress. The average production in respect of wheat has been steadily going up and today it is the second best in the country.

INDUSTRY

The modern city of Delhi and New Delhi is not only the largest commercial centre in northern India but is also an important industrial centre. Since 1947 a large number of industrial concerns have been established. These include factories for the manufacture of razor blades, sports goods, radio and television parts, bicycles and parts, plastic and PVC goods including footwear, textiles, chemicals, fertilisers, medicines, hosiery, leather goods, soft drinks, hand and machine tools. There is also metal forging, casting, galvanising and electroplating, printing and ware-housing. The number of industrial units functioning was about 73,000 in 1987-88 and average number of workers employed was 6.7 lakh. Production was worth Rs 3,850 crore and investment was about Rs 1,420 crore.

IRRIGATION AND POWER

Irrigation sources are canals, tubewells and effluent irrigation from sewage treatment plants. More than 75 per cent of the cropped area is covered under assured irrigation. Special attention is paid to providing irrigation facilities to *harijan*/marginal farmers.

Power generation aspect is being taken care of by two power stations of Delhi Electric Supply Undertaking at Indraprastha Estate and Rajghat. Remaining requirement is being met from Badarpur, Varasuit and national grid.

Non-conventional and energy conservational programme was started in Delhi during 1983. Initially the programme was started in Alipur block and later on the programme was started in all the five rural blocks and urban areas also during 1984-85. The kind of activities that have been undertaken in the rural and urban areas was installation of biogas, wind mills for pumping water, solar cookers and wood stoves, installation of domestic institutional solar water heating systems, setting up of fixed *chulhas* in rural areas and energy conservational items.

TRANSPORT

Delhi is connected by road, rail and air with all states in India. Delhi has three airports—Indira Gandhi International airport for international flights; Palam airport for national air services and Safdurjung airport for training purposes.

FESTIVALS

Being a cosmopolitan city all the major festivals of India are celebrated here.

TOURIST CENTRES

Important tourist centres are Lal Qila, Jama Masjid, Qutab Minar. Jantar Mantar, India Gate, Birla Mandir, Humayun's Tomb, etc.

GOVERNMENT

Lt Governor: Romesh Bhandari
Metropolitan Council Chairman: Purshottam Goyal
Chief Executive Councillor: Jag Pravesh Chandra

Chief Secretary: VK Kapur
Chief Justice: Rabindra Nath Pyne

LAKSHADWEEP

Area: 32 sq km	*Population:* 40,249
Capital: Kavaratti	*Principal language:* Malayalam

HISTORY AND GEOGRAPHY

The Lakshadweep is considered to have been put on the ocean map of the world ever since Hippalus sailed to discover the direct route across the Arabian Sea from Arabia in 45 AD. The islands seem to have been visited by coastal adventurers in search of marine wealth, even before permanent settlement took place. It was Raja Udaya Varma of Kolathunadu, who persuaded and extended all help to his people to cultivate and settle down. The great South Indian rulers like, the Cheras, the Cholas and the Pandyas laid claims on these islands. The Muslim dynasty of Malabar propagated Islam in these islands during the 13th century and constructed many mosques. Even after the conversion of the entire islanders to Islam, sovereignty remained in the hands of the Hindu Raja of Chirakkal. The administration was subsequently passed on to the Muslim house of Arakkal of Cannanore around the middle of the 16th century. In the course of time Arakkal rule became unbearable and Tipu Sultan was invited to liberate the islands. Tipu made a compromise with the Arakkal rulers and took over five islands under his regime. This division continued till 1947, when India became free. After Tipu Sultan, all his land went to the East India Company in 1801.

After the death of Arakkal Bibi, the Raja of Cannanore with the help of the East India Company administered the islands. The financial obligation of the Raja to the Company to look after the islands ran into lakhs of rupees, and thus came the four islands known as "Lakshadweep", the island that cost lakhs of rupees, while the other group was known as Amindivi. In 1956 the islands were constituted into a Union Territory. Since then this region has been governed by the Union Government through an Administrator. The Laccadive, Minicoy and Amindivi groups of islands were renamed as Lakshadweep in 1973.

Lakshadweep, a group of coral islands consists of 12 atolls, three reefs and five submerged sand banks. Of the 36 islands only 10 are inhabited. These lie scattered in the Arabian Sea about 280 to 480 km off the Kerala coast between 8° and 12° 30′ north latitude and 71° and 74° east longitude.

AGRICULTURE

Coconut is the only major crop with a turnover of Rs 1.5 crore in 1987-88. The area under cultivation was about 2,780 hectares. There are dairies at Kavaratti and Minicoy and poultry farms at Kavaratti, Androth, Kalpeni, Minicoy Agatti, Kadmat and Kiltan.

INDUSTRY

Coconut fibre extraction and conversion of its fibre products are the main industry in the islands. Fishing is another major activity. The sea around the islands is highly productive. The number of mechanised fishing boats increased to 331 at the end of July 1988 and are operated from both the inhabited and the uninhabited islands. The islands stand first in the country in the per capita availability of fish.

TRANSPORT

Three ships *MV Amindivi*, *MV Bharat Seema* and *MV Deep Setu* connect the islands with Cochin, Mangalore and Beypore ports. Besides there is an island-to-island and island-to-mainland helicopter service. Vayudoot links Agatti with the mainland twice a week.

GOVERNMENT

Administrator : Wajahat Habibullah.
The jurisdiction of the Kerala High Court extends to Lakshadweep.

PONDICHERRY

Area: 492 sq km	*Population*: 6,04,471
Capital: Pondicherry	*Principal languages*: Tamil and French
	Official Languages: Tamil, Telugu, Malayalam, English and French.

HISTORY AND GEOGRAPHY

In the early 16th century Pondicherry was known as Puducheira. In 1666, the French established their main trading centre at Surat. In the seventies of the 17th century, they slowly concentrated on Pondicherry. During the years that followed, the control over Pondicherry swung between the French and the English. Finally, the French continued their settlement in Pondicherry from 1816, till the merger of it with the rest of independent India.

The present Pondicherry is constituted of the erstwhile French India-Karaikal, Mahe and Yanam, apart from Pondicherry. Karaikal is geographically inside Thanjavur district of Tamil Nadu. Mahe is within Kerala, situated on the mouth of the Mahe river. Yanam is in the East Godavari district of Andhra Pradesh.

AGRICULTURE

Nearly 45 per cent of population in the Territory of Pondicherry is engaged in agriculture and allied pursuits. Ninety per cent of the net cultivated area in this Territory is assured of irrigation from one source or other.

Besides the rice food crop, other minor food crops *viz., ragi, bajra* and pulses are grown in this Union Territory. Sugarcane, groundnut and cotton are the principal cash crops. The Union Territory of Pondicherry tops the list of states in the sphere of fertiliser consumption per unit area. The average per hectare consumption of nitrogen, phosphorous and potash put together is 295.29 kg.

Though an ambitious target of 1,29,400 mt of foodgrain production had been envisaged for the year 1987-88, the actual achievement was only 83,869 mt.

INDUSTRY

There are 12 large scale industries (six textile mills, two sugar mills, one paper mill, one caustic soda unit and two ceramic units) and 29 medium scale industries which provide employment to 15,900 persons. This apart, there are 2,925 registered small scale industries generating employment opportunities to 19,900 persons.

IRRIGATION AND POWER

Irrigation in Pondicherry is mainly through rainfed tanks. There are about 86 tanks of which two are comparatively bigger. In Karaikal, the irrigation system depends on Cauvery water and network of canals.

The power required for Karaikal and Pondicherry is obtained from Tamil Nadu Electricity Board. The Kerala State Electricity Board supplies power for Mahe and the Andhra Pradesh Electricity Board for Yanam.

The Union Territory of Pondicherry has been assured firm allocation of power from Neyveli Power Station, Ramagundam Super Thermal Station and Madras Atomic Power Project, Kalpakkam, to the tune of 65 mw, 50 mw and 5 mw respectively. All the villages in the Territory were extended the benefits of electricity as early as March 1972.

TRANSPORT

Roads

The total length of roads in the Territory is 2,371 km including 1,218 km surfaced roads and 1,153 km unsurfaced roads.

Railways

The State is on a branch line from the main Madurai-Madras line.

Aviation

The nearest airport is Madras.

FESTIVALS

The festival which embraces all the temples of the Pondicherry region is *Masi Magham* (February-March). In Karaikal, *Tetaravu Mata* festival celebrated by the Catholic Church on 15th August every year is very important. The *Kandoori* festival of Muslims, in the memory of Saint Syed Dawood, takes place in the month of February around the Dargah at Karaikal. In Mahe, the annual feast, which occurs on the 14th and 15th of October, pilgrims from all the major religions—Christians, Hindus and Muslims—participate. The statue of St. Teresa is revealed to the public only during this festival.

Apart from these, in all the four regions of the Territory usual festivals of the major religions regularly take place.

TOURIST CENTRES

Some of the important tourist centres are· Sri Manakula Vinayagar temple, Botanical Garden, Joan of Arc Square, War Memorial, Gandhi Square. samadhies of Sri Aurobindo and the Mother, Bharathiar and Bharathi Dasan memorials, Government Park and Park Monument, Sacred Heart of Jesus Church, Auroville, Pondicherry Museum, Indian Institute of Indology and Roman Rolland Library.

GOVERNMENT

Lt Governor: Lt General RS Dyal
Chief Minister: MOH Farook
Speaker: M Chandra Kasu
Chief Secretary: PM Nair
The jurisdiction of Madras High Court extends to Pondicherry.

AREA, POPULATION AND HEADQUARTERS OF DISTRICTS

	District	Area (sq km)	Population	Headquarters
1.	Karaikal	160	1,20,010	Karaikal
2.	Mahe	9	28.413	Mahe
3.	Pondicherry	293	4,44,417	Pondicherry
4.	Yanam	30	11,631	Yanam

30 Diary of National Events 1987-88

1987

JANUARY

2 Dr HK Mahatab, 86, a former Chief Minister of Orissa, passes away in Bhubaneshwar.
— Shanti Swarup Bhatnagar award for 1985 and 1986 in different fields of science and technology given to 19 scientists.
— 'Dhanwantri' award of the Indian National Science Academy for 1986 presented.
3 RD Birla national award for 1987 given to Prof BK Bachhawat of Delhi University.
6 Jaidev, 68, noted music director, passes away in Bombay.
7 India wins the three Test Cricket Series against Sri Lanka in Cuttack.
8 The two-day International Youth Conference against Apartheid opens in New Delhi.
10 'Trishna' led by Lt Col KS Rao finishes its round the world cruise.
— Pandit Babu Nandan Pandey, 101, an associate of Mahatma Gandhi passes away in Patna, Bihar.
— The 11th International Film Festival of India opens in New Delhi.
12 National Youth awards given to ten young people.
13 The Prime Minister of Denmark, Paul Schulcter and his wife, arrives in New Delhi on an official visit.
14 Jai Ram Verma, 84 a veteran freedom fighter and former UP minister, passes away in Lucknow.
15 The Presidential assent declined to the Indian Postal Act of 1988.
16 V Vishwanathan, 78, former Governor of Kerala, dies in New Delhi.
17 India wins the Charminar Challenge one-day Cricket Series against Sri Lanka.
18 Indira Gandhi memorial international gold cup lifted by the Netherlands in New Delhi.
— Hiralal Chunilal Shah, 82, freedom fighter passes away in Baroda.
23 The 1986 national awards for bravery to 24 children presented.
24 Soviet film *Farewell Green Summer* bags the Golden Peacock in the 11th International Film Festival at New Delhi.
— Union Cabinet Minister VP Singh is shifted from Finance to Defence Ministry.
25 The Padma Vibhushan, Padma Bhushan and Padma Sri awards announced.
26 Mrs Neerja Mishra who died in the Pan Am hijacking to Karachi, becomes the first woman to win Ashok Chakra.
27 Olaf Palme, the late Swedish Premier, awarded the Jawarharlal Nehru Award for International Understanding for 1985.

29 The Malaysian Prime Minister, Dr Mahattir Bin Mohammad, arrives on a four-day official visit.
30 The Eradi Commission on Ravi and Beas waters submits its report to the Centre.
31 India and Pakistan begin secretary level talks in New Delhi.

FEBRUARY

3 Mauno Koivisto, President of Finland arrives in New Delhi on a four-day official visit.
— Syed Ahmed, 92, a freedom fighter and former MP dies in Hoshangabad.
— Om Prakash Bhasin awards for science and technology for 1986 announced.
4 Non-aggression pact signed between India and Pakistan.
— Tribal National Volunteers (TNV) in Tripura is declared an extremist organisation.
— The first Indira Gandhi International Award for Peace, Disarmament and Development goes to Parliamentarians for Global Action, New York.
— The Goa assembly passes the three language bill.
5 NL Ganapaiah, 85, founder president of the erstwhile Swatantra Party dies at Hassan.
6 India and Canada sign extradition treaty to curb terrorism.
— The noted mathematician, Keshav Chandra Nag, 94, dies in Calcutta.
— Singing of National Anthem is made compulsory in Kerala.
— Lalithambika Antharjanam, 78, noted writer in Malayalam dies in Kottayam.
8 Kanhaiya Lal, 77, a freedom fighter dies in New Delhi.
9 Dr MR Srinivasan is the new chairman of Atomic Energy Commission (AEC).
10 The Prime Minister inaugurates the 150th birth anniversary celebrations of Sri Ramakrishna in New Delhi.
12 The former Chief Minister of Bihar and veteran freedom fighter Mahamaya Prasad Sinha, 79, passes away in Patna.
13 M Bhaktavatsalam, 90, former Chief Minister of Tamil Nadu passes away in Madras.
— The Sangeet Natak Akademi awards for 1987 announced.
16 Prime Minister meets the opposition leaders on the Punjab situation.
— Mizoram goes to polls for its assembly.
— President Giani Zail Singh arrives in Srinagar on a two-day visit.
— India's first SSK (submarine-to-submarine killer) inducted into the Navy.
17 Naren Das, 80, veteran freedom fighter and socialist leader dies in Calcutta.
— Dr SV Rangauna, 89, well known Kannada litterateur passes away in Mysore.

18 Mizo National Front (MNF) headed by Laldenga secures absolute majority in the Mizoram assembly.
— President inaugurates the 39th World Table Tennis championships in Delhi.
20 The Prime Minister marks the inauguration of Mizoram and Arunachal Pradesh as 23rd and 24th states of the Indian Union.
— A four-member Mizo National Front (MNF) Ministry led by Laldenga is sworn in at Aizawl.
— The President gives away the Shiromani awards for 1986.
22 President Zia of Pakistan arrives in Jaipur to witness the third test match between India and Pakistan.
— Doordarshan launches its morning transmission.
23 Sahitya Akademi awards for 1986 presented.
25 BN Ekbote, 82,.a veteran freedom fighter, passes away at Amravati
— The National Mineral awards for 1985-86 announced.
26 The foundation stone of Choudhary Charan Singh Rural Industrial Training Institute at Patla, Uttar Pradesh is laid by the President.
— The Mizoram Cabinet expanded.
— North Korean Vice Premier and Foreign Minister Kim Yong Nam arrives in New Delhi on an official visit.
— The final report of Kudal Commission of Inquiry into the Gandhi Peace Foundation is submitted to the Government.

MARCH

2 Agreement reached between India and Pakistan on troops pull-out.
— Prime Minister of Netherlands RFM Lubbers arrives on an official visit.
5 RD Pradhan is appointed the new Governor of Arunachal Pradesh.
6 The President presents the 10th Ghalib awards for 1985.
7 Sunil Gavaskar creates history by scoring more than 10,000 runs in Test Cricket.
8 International Women's Day is celebrated.
9 Romanian President, Nicolae Ceausescu arrives in New Delhi on a four-day visit.
10 India and Romania sign agreements for economic, scientific and technical cooperation.
15 The Madras-Tiruchirapalli Rockfort Express meets with an accident killing 22 and injuring 123.
— Veteran freedom fighter and former Rajya Sabha member Mahant Laxmi Narayan Das, 87, passes away in Raipur.
— The national awards 1986 for the welfare of the handicapped presented.
19 CV Ranganathan is appointed India's envoy to China.
23 Kerala, Jammu and Kashmir and West Bengal go to polls for assembly seats.

— India's first new generation rocket, the Augmented Satellite Launch Vehicle (ASLV) fails to take off at Sriharikota.

25 Left Front, Left Democratic Front and National Conference (F)-Congress(I) alliance secure two-third majority in West Bengal, Kerala and Jammu and Kashmir assembly elections respectively.

— Congress(I) wins all the three parliamentary by-elections from Hardwar (UP), Secunderabad (AP) and Nanded (Maharashtra).

26 A five-member Left Democratic Front Ministry headed by EK Nayanar and an eight-member National Conference (F)-Congress(I) coalition government led by Dr Farooq Abdulla are sworn in Kerala and Jammu and Kashmir respectively.

Prime Minister Rajiv Gandhi receives a medallion from Mexican envoy for his peace initiative.

— Pakistan wins the Charminar Challenge one-day international cricket.

27 Union Law Minister Ashok Sen resigns from the Union Cabinet.

28 Padma Vibhushan and Padma Sri awards for 1987 presented to 43 recipients in New Delhi.

31 A fifteen-member Left Front Ministry headed by Joyti Basu is sworn in at Calcutta.

APRIL

1 Jose Eduardo Dos Santos, Angolan President, arrives in New Delhi on a three-day state visit.

4 SH Vatsyayan Agyeya, 77 the renowned Hindi writer, poet and Jnanpith award winner, passes away in New Delhi.

6 Thakkar-Natarajan Commission to probe into the Fairfax affairs appointed.

7 V Kamentsev, Soviet Deputy Prime Minister, arrives in New Delhi on a five-day state visit to India.

11 Ninety five defence personnel and 13 civilians honoured with *Param Vishisht Seva Medal, Ati Vishisht Seva Medal* and highest peace time awards.

12 VP Singh, Defence Minister, resigns from the Union Cabinet.

14 The Prime Minister inaugurates a three km road bridge across the Brahmaputra near Tezpur in Assam.

20 Shanti Swarup Bhatnagar awards for 1985 and 1986 presented.

27 Ramesh Chander Arora is appointed ambassador to Iran.

MAY

1 National Film awards for 1986 announced.

— NS Varadachari, 90, veteran freedom fighter, passes away in Madras.

— Liver Cell transfusion therapy carried out for the first time in India at the Osmania General Hospital, Hyderabad.

2 The President presents the Ahimsa award.

3 Dr Mankekar, 77, veteran journalist and writer, passes away in New Delhi.

4 ABA Ghani Khan Choudhury, Minister for Programme Implementation, resigns from the Union Cabinet.

— A 'RH-560' Sounding Rocket is successfully launched.

6 Gagai Ram Dale, 117, oldest freedom fighter of north-eastern region, passes away in Tezpur.

— Statehood is conferred on Goa.

11 President's rule is imposed in Punjab.

15 Surender Jha, editor 'Science Age', Bombay gets the Indian National Science Academy's first Indira Gandhi prize for popularisation of science.

16 Dr MV Minajgi, 86, noted painter, passes away in Hubli, Karnataka.

— The Prime Minister announces a new insurance scheme for landless and farm labourers.

19 Communal riots erupt in Meerut killing 50 persons.

22 Communal violence breaks out in Old Delhi areas, killing four and injuring 85 persons.

25 The African Festival 1987 opens in New Delhi.

26 The first SAARC countries meeting on plant genetic resources begins in New Delhi.

27 Amal Datta of the CPM is appointed chairman of the Public Accounts Committee of Parliament.

28 Archaryaratha Deshabhushanji Maharaj, 98, spiritual head of the 'Digambar' Jain community passes away in Karnataka.

29 Charan Singh, 85, former Prime Minister, passes away in New Delhi.

30 Goa becomes the 25th State of the Indian Union.

30 The Vice President, R Venkataraman, opens the Indian festival in Zurich.

31 Qamar Moradabadi, 77 noted Urdu poet, passes away in Moradabad, Uttar Pradesh.

JUNE

1 Khwaja Ahmed Abbas, 73, noted film maker and journalist, passes away in Bombay.

— Surinder Singh Gill appointed ambassador of India to the Democratic People's Republic of Korea.

2 India and Finland sign a three-year cultural exchange programme.

3 The 19 Indian boats carrying relief supplies to Jaffna return as Sri Lanka refuses entry.

4 Indian Air Force drops relief supplies in Jaffna.

11 The Hindi film *Paar* wins the FPRESCI award in Bulgaria.

15 India and Sri Lanka reach an agreement on the modalities of relief supplies to the people of Jaffna.

— Satya Narayan Majumdar, 77, former member of Rajya Sabha, trade union leader and freedom fighter, passes away in Calcutta.
16 Arun Kumar Banerjee is appointed high commissioner of India to Maldives.
17 Haryana goes to assembly elections.
18 SAARC ministerial meeting starts in New Delhi.
— MS Swaminathan is winner of the first World Food prize.
19 Mahsenvi Jayraj, 72, Jain Muni of the *Aradhnadham* in Jamnagar, passes away in Rajkot.
— Dr Salim Ali, 91, world renowned ornithologist, passes away in Bombay.
20 Devi Lal heads the Lok Dal-BJP coalition government in Haryana.
24 Two Indian ships carrying relief material and other essential items leave for Jaffna.

JULY

2 Prime Minister Rajiv Gandhi arrives in Moscow on a two-day official visit.
3 The year-long Festival of India in the Soviet Union is inaugurated in Moscow.
— Communal violence erupts again in Meerut, killing six persons.
5 Swamy Sreenadhanandaji Maharaj, 76, head of the Shri Ramakrishna Ashram, passes away in Trivandrum.
6 A memorandum of cooperation is signed in New Delhi between India and Norway.
— Terrorists kill 36 passengers of a Haryana Roadways bus near Lalru village in Patiala district.
7 Thirty six bus passengers gunned down and several injured by terrorists near Hisar in Haryana.
— The veteran freedom fighter and Gandhian, Shyam Sunder Das, 91, passes away at Kozhikode, Kerala.
9 Delhi-bound Dakshin Express washed away in flash floods near Kazipet in Andhra Pradesh, killing 53 persons.
13 Elections held for the eighth President of India.
14 Mufti Mohammad Syed, Union Minister for Tourism, resigns from the Central Cabinet.
15 The former Union Minister of State for Education, Dhana Singh Gulshan, 85, passes away at Bhatinda.
— Former Union Ministers Arun Nehru, VC Shukla and Arif Mohammad Khan are expelled from the Congress (I).
16 R Venkataraman is elected the eighth President of the Indian Union.
— VP Singh resigns from the Congress Party and the Rajya Sabha.
17 Amitabh Bachchan resigns from the membership of the Lok Sabha.
18 Arun Singh, Minister of State for Defence, resigns from the Union Council of Ministers.

— Haryana Ministry is expanded.
— Durga Ratan awards for excellence in journalism distributed.
19 Brijlal Verma, 71, former Union Minister. passes away in Ahmadabad.
23 The Minister of State for Public Enterprises, KK Tewary, resigns from the Union Council of Ministers.
24 PT Usha bags the first gold medal for India in the seventh Asian Track and Field meet in Singapore.
25 R Venkataraman is sworn in as the eighth President of the Indian Republic.
— The Union Cabinet is reshuffled.
29 India and Sri Lanka sign an accord in Colombo, to bring about reconciliation and normalcy in the strife-torn Island.
30 Prime Minister Rajiv Gandhi escapes an attempt on his life by a Sri Lankan naval guard in Colombo.

AUGUST

2 Viswanathan Anand of India becomes the first Asian to win the World Junior Chess championship.
— Geet Sethi of India retains the World Billiards championship.
7 Arti Pradhan, 14, from Maharashtra swims across the English Channel.
9 Frontier Gandhi, Khan Abdul Ghaffar Khan, is awarded *Bharat Ratna*.
— Joint celebrations to commemorate 40 years of India's independence and Jawaharlal Nehru's birth centenary are launched at Bombay by the Prime Minister.
11 Seven ministers inducted into the Haryana Cabinet.
20 B Shankaranand, Minister for Water Resources, resigns from the Union Cabinet.
21 Dr Shankar Dayal Sharma, Governor of Maharashtra, is elected the eighth Vice President of India.
22 Dr Balwant Rao, 86, noted freedom fighter, passes away in Udupi in Karanataka.
— Aasi, 'Ramnagri', 90, renowned Urdu poet and freedom fighter passes away in Varanasi.
26 Dr Satchidanand Rantroy 'Sachi', Oriya writer gets the Jnanpith award for 1986.
29 Prof B Reddi is selected for the Dada Saheb Phalke award for 1986.

SEPTEMBER

2 Dr Shankar Dayal Sharma is sworn in as the eighth Vice President of India.
10 GB Pant centenary celebrations inaugurated by the President in New Delhi.

11 Mahadevi Verma, 80, Jnanpith award winner and Hindi poetess, passes away in Allahabad.
18 The 24th National Film awards presented by the President.
25 Maqbool Fida Hussain is awarded Kalidas Samman for 1987-88 by the Madhya Pradesh Government.
29 Pakistani troops retreat after failing to take control of Siachen glacier area from the Indian troops.

OCTOBER

1 The Rajasthan Sati (Prevention) Ordinance, 1987, promulgated.
— 'Henry Moore in India' exhibition inaugurated in New Delhi.
2 A new political forum 'Jan Morcha' is launched.
8 Indian troops repulse a Pakistani attack in the Saltoro ridge area in Siachen.
9 Guru Gopinath, 80, famous Kathakali artist, passes away in Cochin.
10 India announces suspension of trade and technical cooperation with Fiji.
11 Rohit Manushankar Dave, 78, freedom fighter, passes away in Bombay.
12 Swiss Vice President, Otto Stitch, arrives in New Delhi on a six-day visit.
— Prime Minister, Rajiv Gandhi arrives in Vancouver in Canada to participate in the five-day Commonwealth Summit.
13 Kishore Kumar, 58, playback singer, passes away in Bombay.
14 The Canadian authorities uncover a plot to kill Prime Minister Rajiv Gandhi in Vancouver.
18 Prof N Krishna Pillai wins the Vaylar Rama Varma literary award for the year 1987.
21 Security forces raid the Golden Temple in Amritsar.
27 Vijay Merchant, 76, celebrated cricketer, passes away in Bombay.
— The Sarkaria Commission Report on Centre-State relations presented.
29 Dr Nalinaksha Sanyal, 90, freedom fighter and former West Bengal minister, passes away in Calcutta.
31 The prestigious Indira Gandhi Award for National Integration conferred on Aruna Asaf Ali.

NOVEMBER

2 The third summit of the South Asian Association for Regional Cooperation opens in Kathmandu, Nepal.
5 Dr Dasaradhi Krishnamachari, 62, former poet laureate and freedom fighter, passes away in Hyderabad.
6 The Sri Lankan President, JR Jayewardene, visits India.
7 The Rajasthan Governor, Vasantrao Patil, resigns
8 Australia wins the Reliance World Cricket Cup at Eden Gardens in Calcutta.

12 Twenty one children selected for the annual national awards for bravery.
13 Chinese Vice Foreign Minister, Liu Shuging, arrives in New Delhi on a three-day visit.
— The Soviet Land Nehru award presented by the Vice President, Dr SD Sharma, in New Delhi.
14 Fifth International Children's Film Festival begins at Cuttack, Orissa.
20 Nikolai Ryzhkov, Chairman of the Council of Ministers of USSR, arrives in New Delhi on a five-day official visit.
— Congress (I) secures absolute majority in the elections to the Nagaland state assembly.
— President, R Venkataraman, inaugurates the 3rd South Asian Federation Games, 1987 at the Salt Lake Stadium in Calcutta.
21 The year-long Soviet Cultural Festival opens in New Delhi.
22 A 20-member Congress Ministry headed by Hokishe Sema is installed in Nagaland.
25 Mikhail Gorbachev, Soviet leader, gets the 1987 Indira Gandhi Prize for Peace, Disarmament and Development.
-- India tops the third South Asian Federation Games at Calcutta.
30 Admiral Jayant Ganpat Nadkarni takes over as new Chief of the Naval Staff.
— The report of the Thakkar—Natarajan Commission is submitted to the Government.
-- The Rajasthan Sati (Prevention) Bill, 1987 becomes a law.

DECEMBER

12 Prafulla Dey, 73, noted freedom fighter, passes away in Calcutta.
15 P Ramamurthy, 80, veteran CPM leader, passes away in Madras.
— Prime Minister Rajiv Gandhi arrives in Rangoon, Burma on a two-day official visit.
18 The first ever meeting of the Union Cabinet outside Delhi, begins in the wildlife reserve at Sariska, Rajasthan.
20 President R Venkataraman opens the second National Games in Trivandrum, Kerala.
21 The seventh Indian expedition to Antarctica lands safely on the icy continent.
24 Tamil Nadu Chief Minister, MG Ramachandran, 70, passes away in Madras. TVR Nedunehezhiyan is appointed the interim Chief Minister.
— President of Afghanistan, Sayid Mohammad Najibullah, visits New Delhi.
26 Sahitya Akademi awards for 1987 announced.
28 Viswanathan Anand becomes the first Indian to win the Grandmaster title in chess.

1988

JANUARY

3 Ramesh Krishnan of India wins the New Zealand open tennis tournament at Wellington.
— Oil struck at Amalapuram in Andhra Pradesh.
4 Eleven scientists honoured by the Indian National Science Academy for their distinguished research.
6 Devi Lal Ministry except two, resigns in Haryana.
7 Janaki Ramachandran, wife of late MG Ramachandran, is sworn in as Chief Minister of Tamil Nadu.
— Keshav Chandra Mishra, 70 a noted Hindi author, passes away in Deoria.
9 Three memoranda of understanding are signed in New Delhi between India and Italy.
10 Filmotsav 88 inaugurated in Trivandrum, Kerala.
11 Six non-Congress (I) Chief Ministers demand an inter-state council.
13 Mavelikkara Krishnan Kutty Nair, 67, one of the top mridangam players in the country, passes away in Madurai.
— Dronacharya awards announced.
16 Lakshmi Kant Jha, 74, noted economist passes away in New Delhi.
— Reconstituted council of ministers in Haryana sworn in.
— Pakistan wins the Second Indira Gandhi International gold cup hockey tournament in Lucknow.
17 Indu Dahiya wins the fifth women's car rally.
18 The Chief Minister of Rajasthan, Harideo Joshi, resigns.
— Leela Mishra, 80, renowned character actor of Hindi films passes away in Bombay.
— The national youth awards presented.
19 The Prime Minister's Shram Awards 1987 given away.
20 Khan Abdul Ghaffar Khan, 98, passes away in Peshawar, Pakistan.
— Shiv Charan Mathur is sworn in as the Chief Minister of Rajasthan.
— Prime Minister Rajiv Gandhi arrives in Stockholm on a four-day visit.
22 GD Birla International Award for outstanding contribution to humanism is given to Baba Amte.
— Ustad Inam Ali Khan, 60, noted tabla exponent, passes away in Bombay.
— The National Akademi awards for 1988 given to 10 artists.
23 The 92nd birth anniversary of Netaji Subhash Chandra Bose is celebrated.
25 Bharat Ratna conferred posthumously on late MG Ramachandran.
— Prime Minister presents the national award for bravery to 21 children in New Delhi.
— JR Jayewardene, President of Sri Lanka, arrives in New Delhi on a six-day visit.

26 Ramavtar Shastri, 68, veteran CPI leader and former MP, passes away in Patna.
— Seven ministers inducted into the Rajasthan Ministry.
29 Tripura is declared 'disturbed area' under the Armed Forces (Special Powers) Act.
30 Tamil Nadu is brought under President's rule.
— The International Gandhi Award 1988 for work in leprosy presented to Professor TN Jagdishan and Dr Ma Harde in New Delhi.
31 Zeeshan Ali wins the Indian Master's Satellite tennis tournament singles title in Calcutta.
— PV Akilandam, 66, well known Tamil writer, passes away in Madras.

FEBRUARY

1 India and the Soviet Union sign a protocol for cooperation in New Delhi.
2 Khan Ghazi Kabli, 99, veteran freedom fighter, passes away in New Delhi.
— Tripura and Meghalaya assembly elections are held.
4 Congress (I)-Tripura Upajati Juba Samiti (TUJS) coalition gets a majority in the Tripura assembly elections.
— Soviet Union wins the Jawaharlal Nehru Gold Cup football tournament played at Siliguri.
5 A sixteen-member two-tier Congress-TUJS coalition Ministry headed by Sudhir Ranjan Majumdar, is formed in Tripura.
— PA Sangma, Union Minister of Labour, is elected leader of the Meghalaya Congress (I) legislature party.
6 In Meghalaya an 11-member Congress Ministry led by Purno Agitok Sangma, is sworn in.
— Rajasthan Cabinet is expanded.
9 The Kalinga prize for 1987 for popularisation of science goes to Dr Marcel Roche of Venezuela.
10 The 40-day GNLF bandh begins in the town areas of Darjiling.
12 Ghalib Awards 1986 presented by the Vice President in New Delhi.
13 The Chief Ministers, Motilal Vora of Madhya Pradesh and Bindeshwari Dubey of Bihar, resign.
14 The Union Cabinet is reshuffled.
— Arjun Singh is sworn in as Chief Minister of Madhya Pradesh.
— Bhagwat Jha Azād is sworn in as Chief Minister of Bihar.
— New Governors are appointed to the states of Karnataka, Maharashtra, Rajasthan, Bihar, Haryana and Kerala.
15 Debi Singh Tewatia resigns as Chief Justice of Calcutta High Court.
17 Karpoori Thakur, 67, former Chief Minister of Bihar, dies in Patna.
— RK Jaichandra Singh, Union Minister of State for Chemicals and Petro-Chemicals, resigns from his post.

— Dr Birendra Kumar Bhattacharya, eminent Assamese novelist, becomes the president of the Sahitya Akademi.
18 Li Gun Mo, Prime Minister of North Korea arrives in New Delhi.
20 The President's Jeevan Raksha Padak for bravery is awarded to 39 people.
21 Jawaharlal Nehru award for popularisation of science given to the Karnataka Rajay Svijnana Parishad, Bangalore.

MARCH

1 Eminent Hindi scholar Sohan Lal Dwivedi passes away in Kanpur.
— Justice Guman Mal Lodha is sworn in as Chief Justice of the Guwahati High Court.
2 Dada Shewak Bhojraj, 82, freedom fighter and educationist, passes away in Bombay.
3 Government orders the release of five Sikh head priests.
5 A three-member new Manipur Ministry headed by RK Jaichandra Singh assumes office.
6 The Punjab assembly, kept under suspended animation, is dissolved.
8 Fifteen persons are killed when an Indian Air Force plane crashes near Cuttack in Orissa.
9 Bhai Jasbir Singh Rode takes over as the Akal Takht Jathedar.
— MB Srinivasan, noted film music director, passes away in Lakshadweep.
11 Prime Minister Rajiv Gandhi arrives in Ahmadabad on a two-day visit.
12 Samaresh Bose, 64, eminent litterateur passes away in Calcutta.
— Acharya Vaidyanath Sastri, 72 veteran freedom fighter and Vedic scholar, passes away in New Delhi.
15 Lee Kuan Yew, Singapore Prime Minister, arrives in New Delhi on a three-day official visit.
16 About 130 people, including 40 children, are charred to death in a bus fire near Raipur, Madhya Pradesh.
17 India's sophisticated remote sensing satellite IRS-IA is launched from the Baikonour cosmodrome in the Soviet Union.
18 The Chief Ministers' Conference is held in New Delhi.
— The Akashvani annual awards for 1987 announced.
19 The Bharat Ratna award conferred on the late MG Ramachandran posthumously, is presented in New Delhi.
24 Sirkazhi Govindarajan, 55, Carnatic musician, dies in Madras.
26 Oil and gas is discovered in the Cauveri basin at Nannilam in Tamil Nadu.
30 Presidential assent given to the 59th Constitutional Amendment Bill to extend President's rule and impose emergency along with suspension of Article 21 in Punjab.

APRIL

1 Thirty seven people, including 14 women and seven children, are massacred by terrorists in Punjab.
— India wins the Sharjah cup Cricket tournament at Sharjah.
2 Oil and gas are discovered in the Krishna-Godavari offshore area.
— President R Venkataraman gives away 92 gallantry awards to defence personnel and civilians, in New Delhi.
4 The US Defence Secretary, Frank Carlucci, arrives in New Delhi on a three-day visit to India.
— Mohinder Singh Saathi and Anjana Kanwar are re-elected Mayor and Deputy Mayor of Delhi, respectively.
7 Dinanath Nadim, 72, noted Kashmiri poet, dies in Srinagar.
10 The Jawaharlal Nehru awards presented to seven Soviet citizens and a puppet theatre in Moscow.
11 The 35th national film awards announced.
12 Ramanand Yadav, Minister of State for Mines, resigns from the Union Council of Ministers.
14 Prime Minister Rajiv Gandhi arrives in Tokyo on a two-day official visit to Japan.
15 The six-month long Festival of India in Japan, begins.
23 Nehru Literacy award for 1987 presented to Prof NG Ranga.
25 Crown Prince of Jordan, El Hassan Bin Talal, arrives in New Delhi on a five-day state visit to India.
26 The Joint Parliamentary Committee report on the controversial Bofors-Howitzer deal, is presented to both the Houses of Parliament.
— Justice Amitav Banerjee takes over as Chief Justice of Allahabad High Court.
27 Palestinian poet, Mahmoud Darwish, is awarded the Kumaranasan World prize for literature for 1988.
29 Thirty two people are killed and 82 injured near the Golden Temple complex in Amritsar.
30 Vice President Dr SD Sharma leaves on a 12-day tour of the three Caribbean nations.
— General K Sundarji retires as Chief of the Army staff.

MAY

1 General Vishwanath Sharma takes over as Chief of the Army Staff.
— Dr YS Parmar University of Horticulture and Forestry at Solan in Himachal Pradesh, inaugurated.
— The 1988 Rabindra Memorial awards announced by West Bengal government.
2 A three-storey children's hospital in Jammu collapses killing 30 person including a number of children.

— President R Venkataraman presents the 35th National Film awards in New Delhi.
— Raj Kapoor receives the Dada Saheb Phalke award for 1987.
— Vasudeva Pannicker, 47, AICC general secretary and member of Lok Sabha, dies in New Delhi.
3 Premendra Mitra, 84, noted litterateur, dies in Calcutta.
4 'National Council of Khalistan' and 'Dal Khalsa' are declared unlawful associations.
— Dr Najibullah, President of Afghanistan, arrives in New Delhi on a three-day state visit.
9 Sushila Rohatgi, Minister of State for Power, resigns from the Council of Ministers.
— Hariprasad Dwivedi 'Vyogihari', 93, close associate of Mahatma Gandhi, dies in New Delhi.
10 Khostar Abdur Rahman, 96, noted Urdu poet of.Gujarat, dies in Dhaka.
— BN Birla Planetarium is opened in Madras.
11 The birth centenary of Asaf Ali, freedom fighter, is celebrated in New Delhi.
— Indian troops repulse a Pakistani attempt to encroach upon the Bana post in Belafondla area of Siachen glacier
12 The centenary celebrations of the Victoria Technical Institute, Madras, inaugurated.
14 Major General Joaquim Alberto Chissani, President of Mozambique, arrives in New Delhi.
— The first round of talks between the Home Secretaries of India and Pakistan begins in New Delhi
15 One hundred and forty six persons, many of them terrorists, surrender to the security forces in the Golden Temple complex, Amritsar.
18 All the terrorists in the Golden Temple complex in Amritsar, surrender to the security forces.
— Forty five people including 35 migrant labourers, are killed and 27 injured in an orgy of terrorist violence in Ropar district in Punjab.
— The first-ever national channel of All India Radio begins its broadcast.
19 Justice Ravindra Nath Pyne is appointed Chief Justice of Delhi High Court.
— The Benami Transactions (Prohibition of the Right to Recover Property) Ordinance, 1988 is promulgated.
20 Forty Five persons are killed and more than 100 injured in a series of bomb blasts in several areas in Punjab and Himachal Pradesh.
26 The Religious Institution (Prevention of Misuse) Ordinance, 1988 promulgated.
— The Delhi Urdu Academy award for 1987 announced.
28 India and China sign their first cultural agreement in Beijing.

30 India's Gautam Ghosh wins the *Golden Semurg* award for the best film at the Tenth International Tashkent Film Festival in Russia.
31 Dr Aryendra Sharma, 77, noted Hindi and Sanskrit scholar, dies in Hyderabad.
— Twenty nine medical professionals receive BC Roy national awards for the year 1985.

JUNE

2 Foreign Secretaries of India and Pakistan meet in New Delhi and hold discussions on all aspects of bilateral relations.
— Raj Kapoor, 64, doyen of Indian Cinema, dies in New Delhi.
4 Prime Minister Rajiv Gandhi leaves on an eight-day four-nation tour.
7 The first batch of 400 soldiers of the Indian Peace Keeping Force are withdrawn from Sri Lanka.
8 India and China sign an annual trade protocol.
9 Prime Minister Rajiv Gandhi addresses the third special session of the UN General Assembly on disarmament.
13 Pabitra Mohan Pradhan, 78, former deputy Chief Minister of Orissa and veteran freedom fighter, dies in Bhubaneshwar.
16 Girish Karnad is appointed the chairman of Sangeet Natak Akademi, New Delhi.
17 The National Citizen's awards 1987 presented.
18 VP Singh, Jan Morcha leader, wins the by-election from the Allahabad Lok Sabha constituency.
21 Thirty persons are killed and 75 injured in a bomb blast in Amritsar city.
25 The Union Cabinet is reshuffled.
— A 13-member Ministry headed by ND Tiwari, is sworn in at Lucknow, Uttar Pradesh.
— A seven member Ministry headed by Sharad Pawar is sworn in at Bombay, Maharashtra.
27 The Maharashtra Cabinet is expanded.
30 Jain Muni Acharya Acharyashree, 80, passes away in Kolhapur district.

JULY

2 Indira Gandhi National awards for 1987-88 for social service, instituted by the Madhya Pradesh government, are announced.
5 Ramnarayan Pathak, 92, prominent Gujarati writer and freedom fighter, dies in Bhavnagar.
— The Prevention of Illicit Traffic in Narcotic Drugs and Psychotropic Substance Ordinance, 1988 is promulgated.
6 R Venkataraman, President, leaves for Moscow on a 11-day visit to the Soviet Union and Mongolia.

8 Four hundred people are feared killed in the Island Express train accident jumping the rails near Quilon in Kerala.

— The Festival of India in Moscow ends.

13 The second development flight of the Augmented Satellite Launch Vehicle (ASLV-D2) crashes into the sea.

17 Gastro-enteritis and cholera kill 46 persons in Delhi.

19 Prime Minister Rajiv Gandhi pays a visit to Turkey.

20 Adoor Gopalakrishnan's *Anantaram* is awarded the International Film Critics prize in Prague.

22 INSAT-1C is placed in a geosynchronous orbit by an Aviane-3 rocket launched from Kourow (French Guyana).

— Revised pay scales for college and university teachers throughout the country, announced.

28 National badminton champion, Syed Modi, 28, is shot dead in Lucknow.

— Jamnalal Bajaj awards for 1988 are given away.

29 Lt Governor of Delhi, HL Kapur, quits in the wake of widespread epidemic in the capital.

31 Air Chief Marshal SK Mehra assumes office as Chief of the Air Staff.

— The Uttar Pradesh Cabinet is expanded.

AUGUST

3 The Supreme Court acquits sub inspector Balbir Singh in the Indira Gandhi assassination case and confirms the death sentence on Satwant Singh and Kehar Singh.

— Romesh Bhandari is appointed Delhi's Lieutenant Governor.

6 About 400 people are feared killed when a motor launch capsized in Katihar, Bihar.

— Seven opposition parties form a National People's Front called the Rashtriya Morcha.

— Several parts of north, north-eastern and eastern India are rocked by an earthquake.

7 The eight-month old Nagaland assembly is dissolved and the State is put under President's rule.

8 Taranath Shenoy of India becomes the first deaf and dumb swimmer in the world to swim the Strait of Gilbraltor from Tarifa to Centa.

— Prof Satish Dhawan gets the first GM Modi award in space technology.

10 RK Hegde, Chief Minister of Karnataka, resigns.

11 Javier Perez de Cuellar, UN Secretary General, is selected for the 1987 Jawaharlal Nehru Award for International Understanding.

— A Technology Mission on dairy development is set up.

12 A tripartite agreement is signed in New Delhi by the Centre, the Government of Tripura and the Tripura National Volunteers, to end the insurgency in Tripura.

— Indian National Science Academy honours 10 scientists in the field of science and technology.
— The Indira Gandhi award for popularisation of science for 1988 announced.
13 SR Bommai is sworn in as the 11th Chief Minister of Karnataka in Bangalore.
14 Pakistan confers its highest civil award, Nishan-e-Pakistan, on Morarji Desai.
— The Government orders the release of all the Akali Dal leaders and head priests.
18 GK Reddy Memorial award for journalism for 1988 announced.
21 Earthquake rocks several parts of north-eastern India, Nepal and parts of Bangladesh killing about 750 including more than 450 in Bihar.
22 The accord for creating the Darjiling Gorkha Hill Council is signed in Calcutta.
24 Floods in Uttar Pradesh claim 59 lives; the total death toll goes to 486.
26 Government decides to abolish the export duty on coffee.
— National Consumer Disputes Redressal Commission set up.
30 Lok Sabha passes the Defamation Bill.

SEPTEMBER

1 Fatehsinhrao Gaekwad, 58, former ruler of Baroda, dies in Bombay.
— Bima Niwas Yojana of the Life Insurance Corporation is launched.
— Former Union Law Minister, Shyam Nath Kacker, 65, dies in New Delhi.
— The ninth Finance Commission presents its first report to the Parliament.
5 RD Bhandari, 72, former Governor of Bihar and Andhra Pradesh, dies in Bombay.
— West Bengal legislative assembly passes the Darjiling Gorkha Hill Council Bill, 1988.
6 A one-day nationwide strike is organised by newsmen against the proposed Defamation Bill.
7 Mizoram is brought under President's rule and the State assembly is dissolved.
8 Vijaypat Singhani creates aviation history by flying in his micro-light single engine aircraft from London to Ahmadabad in 21 days.
9 Eleven Indians including ambassador to Vietnam, Arun Patwardhan, are among 74 people killed in a Vietnamese airline crash near Bangkok.
12 President R Venkataraman arrives in Amsterdam on a state visit.
13 Prime Minister Rajiv Gandhi visits the flood-hit areas of Assam.
16 The Official Language Conference is inaugurated in New Delhi.
17 The 24th Olympic Games begin in Seoul, South Korea.
— VV Shirwadkar, noted Marathi poet and dramatist, awarded the 1987 Jnanpith award.

— Yogendra Makwana, Minister of State for Steel and Mines, resigns.
19 Vishnu Krishna Joshi, 69, renowned exponent of Indian classical music dies in Raipur.
— The Madhya Pradesh Cabinet is expanded.
— Supreme Court hands over the sick Kamani Tubes Limited, Bombay to the employees.
20 One hundred and thirty eight detenus of the Operation Blue Star are released from Jodhpur Fort.
22 Twenty five artistes are selected for Sangeet Natak Akademi Awards 1988.
— Government drops the Defamation Bill, 1988.
23 Prime Minister Rajiv Gandhi holds talks with Bhutan King at Thimpu.
29 The unpublished manuscripts of Maulana Azad's biography are to be made public.
— Dadabhai Naoroji Memorial award for 1987 given to Satyajit Ray.
30 King Birendra of Nepal pays a visit to India.

OCTOBER

2 The 24th Olympiad concludes in Seoul, South Korea and India drawing a blank.
— More than 5,000 Gorkha National Liberation Front activists surrender their arms.
5 *Satanic Verses* by Salman Rushdie is banned in India.
— Law Commission is reconstituted.
7 England cancels their cricket tour of India.
— Urdu poet and author, Akhtar Ansari, 79, dies in Aligarh.
— The Darjiling Gorkha Hill Council Bill, 1988 is given the Presidential assent.
11 AP Sharma, 69, former Governor of Punjab and West Bengal, dies in New Delhi.
— Janata Dal, a new party, is launched in Bangalore.
12 The National Commission on Urbanisation presents its final report to the Government.
17 SS Bhatnagar awards for science and technology presented.
19 One hundred and sixty four people are killed in two separate air disasters at Ahmadabad and Guwahati.
23 The Assam Cabinet is reconstituted.
29 Kamaladevi Chattopadhyaya, 85, dies in Bombay.
30 Japan's Kengiro Shinozuka wins the ninth Himalayan car rally.
31 The 1987 Indira Gandhi Award for National Integration is presented to the Bharat Scouts and Guides in New Delhi.

NOVEMBER

1 The Orissa Governor, BN Pande, resigns.

2 The birth centenary celebrations of CV Raman and the diamond jubilee celebrations of the discovery of Raman Effect are held in Calcutta.
3 Indian troops crush a coup attempt in Maldives.
4 Atleast 50 persons die and 54 injured in escalated terrorist violence in Punjab.
— India wins the third Asia Cup cricket tournament at Dhaka.
6 The 1988 Dhanvantri award presented.
8 Twenty four children's books are given awards.
11 The birth centenary celebrations of Maulana Abul Kalam Azad are inaugurated by the President.
14 The year-long birth centenary celebrations of Jawahalal Nehru, begin.
15 Twenty two persons are given the Soviet Land Nehru awards.
16 India recognises the newly declared State of Palestine.
— A three-day International Conference on Nuclear Disarmament is held in New Delhi.
18 Soviet President, Mikhail Gorbachev, pays an official visit to India.
— Dr Najme Heptulla is unanimously elected the Deputy Chairman of Rajya Sabha.
19 The year-long Festival of the USSR in India, ends in New Delhi.
20 India and the Soviet Union sign six agreements and a summit statement.
— Justice MH Beg, 73, former Chief Justice of India and former chairman of the Minorities Commission, dies in New Delhi.
24 The Pay Committee for the employees of public sector undertakings submits its report to the Government.
— The seventieth congress of Afro-Asian Peace and Solidarity Organisation is held in New Delhi.
26 The birth centenary of GV Mavalankar is celebrated
28 The eighth Indian expedition to Antarctica sails off from Marmugao port.
30 More than 870 people are killed in severe cyclonic storm in Bangladesh and West Bengal.

DECEMBER

1 Goswami Girdhari Lal, 69, eminent Sanskrit scholar, dies in New Delhi.
11 Dr Nagendra Singh, 74, former President of the International Court of Justice, dies in the Hague.
15 The Gorkha National Liberation Front sweeps the Darjiling Gorkha Hill Council elections.
16 Ka Naa Subramanyam, 77, noted Tamil writer and critic, dies in New Delhi.
18 Prime Minister Rajiv Gandhi leaves for China on a five-day state visit.
22 India and China sign agreements on inter-governmental cooperation.
24 Jainendra Kumar Jain, 84, noted Hindi litterateur, dies in New Delhi.

— Eminent Urdu poet, Manoharlal Taliq Chakwal, 88, passes away in New Delhi.

26 Twenty five people are killed and more than 100 injured in violence in Vijayawada and elsewhere in Andhra Pradesh.

29 The fourth SAARC summit of the seven heads of State and Government in the region, opens in Islamabad.

31 India and Pakistan sign three agreements in Islamabad.

— Zeeshan Ali lifts the national tennis title.

31 General Information

TABLE OF PRECEDENCE

(Published on 26 July 1979)

1. President
2. Vice President
3. Prime Minister
4 Governors of states within their respective states
5. Former Presidents
6. Chief Justice of India
   Speaker of the Lok Sabha
7. Cabinet Ministers of the Union
   Chief Ministers of states within their respective states
   Deputy Chairman, Planning Commission
   Leaders of Opposition in the Rajya Sabha and the Lok Sabha
   Holders of the Bharat Ratna decoration
8. Ambassadors Extraordinary and Plenipotentiary and High Commissioners of Commonwealth countries accredited to India
   Chief Ministers of states outside their respective states
   Governors of states outside their respective states
9. Judges of the Supreme Court
10 Deputy Chairman, Rajya Sabha
   Deputy Chief Ministers of states
   Deputy Speaker, Lok Sabha
   Members of the Planning Commission
   Ministers of State of the Union and any other Minister in the Ministry of Defence for defence matters.
11. Attorney General of India
   Cabinet Secretary
   Comptroller and Auditor-General of India
   Lieutenant Governors within their respective union territories
12. Chiefs of Staff holding the rank of full General or equivalent rank
13. Envoys Extraordinary and Ministers Plenipotentiary accredited to India
14. Chairmen and Speakers of state legislatures within their respective states
   Chief Justices of High Courts within their respective jurisdiction states
15. Cabinet Ministers in states within their respective states
   Chief Ministers of union territories and Chief Executive Councillor, Delhi, within their respective union territories
   Deputy Ministers of the Union
16. Officiating Chiefs of Staff holding the rank of Lieutenant General or equivalent rank
17. Chairman, Minorities Commission
   Chairman, Scheduled Castes and Scheduled Tribes Commission
   Chairman, Union Public Service Commission
   Chief Election Commissioner
   Chief Justices of High Courts outside their respective jurisdictions
   Puisne Judges of High Courts within their respective jurisdictions
18. Cabinet Ministers in states outside their respective states
   Chairmen and Speakers of state legislatures outside their respective states
   Chairman, Monopolies and Restrictive Trade Practices Commission
   Deputy Chairmen and Deputy Speakers of state legislatures within their respective states
   Ministers of State in states within their respective states
   Ministers of union territories and Executive Councillors, Delhi, within their respective union territories

Speakers of legislative assemblies in union territories and Chairman of Delhi Metropolitan Council, within their respective union territories
19. Chief Commissioners of union territories not having Councils of Ministers, within their respective union territories
Deputy Ministers in states within their respective states
Deputy Speakers of legislative assemblies in union territories and Deputy Chairman of Metropolitan Council, Delhi, within their respective union territories
20. Deputy Chairmen and Deputy Speakers of state legislatures, outside their respective states
Ministers of State in states outside their respective states
Puisne Judges of High Courts outside their respective jurisdictions
21. Members of Parliament
22. Deputy Ministers in states outside their respective states
23. Army Commanders/Vice Chief of the Army Staff or equivalent in other services
Chief Secretaries to state governments within their respective states
Commissioner for Linguistic Minorities
Commissioner for Scheduled Castes and Scheduled Tribes
Members, Minorities Commission
Members, Scheduled Castes and Scheduled Tribes Commission
Officers of the rank of full General or equivalent rank
Secretaries to the Government of India (including officers holding this office ex-officio)
Secretary, Minorities Commission
Secretary, Scheduled Castes and Scheduled Tribes Commission
Secretary to the President
Secretary to the Prime Minister
Secretary, Rajya Sabha, Lok Sabha
Solicitor General
24. Officers of the rank of Lieutenant General or equivalent rank
25. Additional Secretaries to the Government of India
Additional Solicitor General
Advocate Generals of states
Chairman, Tariff Commission
Charge d' Affairs and Acting High Commissioners a pied and ad interim
Chief Ministers of union territories and Chief Executive Councillor, Delhi outside their respective union territories
Chief Secretaries of state governments outside their respective states
Deputy Comptroller and Auditor-General
Deputy Speakers of legislative assemblies in union territories and Deputy Chairman, Delhi Metropolitan Council, outside their respective union territories
Director, Central Bureau of Investigation
Director General, Border Security Force
Director General, Central Reserve Police
Director, Intelligence Bureau
Lieutenant Governors outside their respective union territories
Members, Monopolies and Restrictive Trade Practices Commission
Members, Union Public Service Commission
Ministers of union territories and Executive Councillor, Delhi, outside their respective union territories
Principal Staff Officers of the Armed Forces of the rank of Major General or equivalent rank
Speakers of legislative assemblies in union territories and Chairman of Delhi Metropolitan Council, outside their respective union territories
26. Joint Secretaries to the Government of India and officers of equivalent rank, Officers of the rank of Major General or equivalent rank

PRESIDENTS OF INDIA

Name	*Tenure*
Dr Rajendra Prasad (1884-1963)	26 January 1950—13 May 1962
Dr Sarvepalli Radhakrishnan (1888-1975)	13 May 1962 -13 May 1967
Dr Zakir Husain (1897-1969)	13 May 1967—3 May 1969
Varahagiri Venkatagiri (1894-1980)	3 May 1969—20 July 1969 (Acting)
Justice Mohammad Hidayatullah (b—1905)	20 July 1969—24 August 1969 (Acting)
Varahagiri Venkatagiri	24 August 1969—24 August 1974
Fakhruddin Ali Ahmed (1905-1977)	24 August 1974—11 February 1977
BD Jatti (b—1913)	11 February 1977—25 July 1977 (Acting)
Neelam Sanjiva Reddy (b—1913)	25 July 1977—25 July 1982
Giani Zail Singh (b—1916)	25 July 1982—25 July 1987
R Venkataraman (b—1910)	25 July 1987—Till Date

VICE PRESIDENTS OF INDIA

Name	*Tenure*
Dr Sarvepalli Radhakrishnan	1952—1962
Dr Zakir Husain	1962—1967
Varahagiri Venkatagiri	1967—1969
Gopal Swarup Pathak (1896—1982)	1969—1974
BD Jatti	1974—1979
Justice Mohammad Hidayatullah	1979—1984
R Venkataraman	1984—1987
Dr Shanker Dayal Sharma (b—1918)	1987—Till Date

PRIME MINISTERS OF INDIA

Name	*Tenure*
Jawaharlal Nehru (1889—1964)	15 August 1947—27 May 1964
Gulzari Lal Nanda (b—1898)	27 May 1964—9 June 1964 (Acting)

Name	*Tenure*
Lal Bahadur Shastri (1904—1966)	9 June 1964—11 January 1966
Gulzari Lal Nanda	11 January 1966—24 January 1966 (Acting)
Indira Gandhi (1917—1984)	24 January 1966—24 March 1977
Morarji Desai (b—1896)	24 March 1977—28 July 1979
Charan Singh (1902—1987)	28 July 1979—14 January 1980
Indira Gandhi	14 January 1980—31 October 1984
Rajiv Gandhi (b—1944)	31 October 1984—Till Date

CHIEF JUSTICES OF INDIA

Name	*Tenure*
Harilal J Kania	26 January 1950—6 November 1951
M Patanjali Sastri	7 November—3 January 1954
Mehar Chand Mahajan	4 January 1954—22 December 1954
BK Mukherjea	23 December 1954—31 January 1956
SR Das	1 February 1956—30 September 1959
Bhuvaneshwar Prasad Sinha	1 October 1959—31 January 1964
PB Gajendragadkar	1 February 1964—15 March 1966
AK Sarkar	16 March 1966—29 June 1966
K Subba Rao	30 June 1966—11 April 1967
KN Wanchoo	12 April 1967—24 February 1968
M Hidayatullah	25 February 1968—16 December 1970
JC Shah	17 December 1970—21 January 1971
SM Sikri	22 January 1971—25 April 1973
AN Ray	26 April 1973—27 January 1977
MH Beg	28 January 1977—21 February 1978
YV Chandrachud	22 February 1978—11 July 1985
Prafullachandra Natvarlal Bhagwati	12 July 1985—20 December 1986
RS Pathak	21 December 1986—16 June 1989
ES Venkataramiah	17 June - Till date

CHIEF ELECTION COMMISSIONERS OF INDIA

Name	*Tenure*
Sukumar Sen	21 March 1950—19 December 1958
KVK Sundaram	20 December 1958—30 September 1967
SP Sen Verma	1 October 1967—30 September 1972
Dr Nagendra Singh	1 October 1972—6 February 1973
T. Swaminathan	7 February 1973—17 June 1977
SL Shakdhar	18 June 1977—17 June 1982
RK Trivedi	18 June 1982—31 December 1985
RVS Peri Sastri	1 January 1986—Till date

RECIPIENTS OF BHARAT RATNA

Name	*Awarded in*
Dr Sarvepalli Radhakrishnan (1888-1975)	1954
Chakravarti Rajagopalachari (1878-1972)	1954
Dr Chandrasekhar Venkat Raman (1888-1970)	1954
Dr Bhagwan Das (1869-1958)	1955
Dr Mokshagundam Visvesvaraya (1861-1962)	1955
Jawaharlal Nehru (1889-1964)	1955
Govind Ballabh Pant (1887-1961)	1957
Dr Dhondo Keshav Karve (1858-1962)	1958
Dr Bidhan Chandra Roy (1882-1962)	1961
Purushottam Das Tandon (1882-1962)	1961
Dr Rajendra Prasad (1884-1963)	1962
Dr Zakir Husain (1897-1969)	1963
Dr Pandurang Vaman Kane (1880-1972)	1963
Lal Bahadur Shastri (Posthumous) (1904-1966)	1966
Indira Gandhi (1917-1984)	1971
Varahagiri Venkatagiri (1894-1980)	1975
Kumaraswami Kamraj (Posthumous) (1903-1975)	1976
Mary Teresa Bojaxhiu (Mother Teresa) (b-1910)	1980
Acharya Vinoba Bhave (Posthumous) (1895-1982)	1983
Khan Abdul Ghaffar Khan (1890-1988)	1987
Marudur Gopalan Ramachandran (Posthumous) (1917-1987)	1988

COMMANDERS-IN-CHIEF

Name	*Tenure*
General Sir Roy Bucher	1 January 1948—14 January 1949
General (Now Field Marshal) KM Chopra	15 January 1949—14 January 1953
General Maharaj Rajendra Sinhji	14 January 1953—31 March 1955

CHIEFS OF ARMY STAFF

Name	*Tenure*
General Maharaj Rajendra Sinhji	1 April 1955—14 May 1955
General SM Srinagesh	15 May 1955—7 May 1957
General KS Thimayya	8 May 1957—7 May 1961
General RN Thapar	8 May 1961—19 November 1962
General JN Choudhuri	20 November 1962—7 June 1966
General PP Kumaramangalam	8 June 1966—7 June 1969
General SHFJ Manekshaw	8 June 1969—31 December 1972
Field Marshal SHFJ Manekshaw	1 January 1972—15 January 1973
General GG Bewoor	15 January 1973—31 May 1975
General TN Raina	1 June 1975—31 May 1978
General OP Malhotra	1 June 1978—31 May 1981
General KV Krishna Rao	1 June 1981—31 July 1983
General AS Vaidya	1 August 1983—31 January 1986

Name	*Tenure*
General K Sunderji	1 February 1986—30 April 1988
General VN Sharma	1 May 1988—Till date

CHIEFS OF NAVAL STAFF

Name	*Tenure*
Vice Admiral RD Katari	22 April 1958—4 June 1962
Vice Admiral BS Soman	5 June 1962—3 March 1966
Admiral AK Chatterjee	4 March 1966—27 February 1970
Admiral SM Nanda	28 February 1970—28 February 1973
Admiral SN Kohli	1 March 1973—28 February 1976
Admiral JL Cursetji	1 March 1976—28 February 1979
Admiral RL Pereira	1 March 1979—28 February 1982
Admiral OS Dawson	1 March 1982—30 November 1984
Admiral RH Tahiliani	30 November 1984—30 November 1987
Admiral JG Nadkarni	1 December 1987—Till date

CHIEFS OF AIR STAFF

Name	*Tenure*
Air Marshal Sir Thomas Elmhirst	15 August 1947—21 February 1950
Air Marshal Sir Ronald Lvelaw Chapnam	22 February 1950—9 December 1951
Air Marshal Sir Geraid Gibbs	10 December 1951 - 31 March 1954
Air Marshal S Mukherjee	1 April 1954—8 November 1960
Air Marshal AM Engineer	1 December 1960—31 July 1964
Air Chief Marshal Arjan Singh	1 August 1964—15 July 1969
Air Chief Marshal PC Lal	16 July 1969—15 January 1973
Air Chief Marshal OP Mehra	16 January 1973—1 February 1976
Air Chief Marshal H Moolgavkar	1 February 1976—31 August 1978
Air Chief Marshal IH Latif	1 September 1978—31 August 1981
Air Chief Marshal Dilbagh Singh	1 September 1981—3 September 1984
Air Chief Marshal LM Katre	4 September 1984—1 July 1985
Air Chief Marshal DA La Fontaine	3 July 1985—31 July 1988
Air Chief Marshal SK Mehra	1 August 1988—Till date

WINNERS OF PARAM VIR CHAKRA

Major Somnath Sharma, Kumaon Regiment
Posthumous—November 1947 (Kashmir Operations 1947-48)

2nd Lt RR Rane, Corps of Engineers
April 1948 (Kashmir Operations 1947-48)

Company Havildar Major Piru Singh, Rajputana Rifles
Posthumous—July 1948 (Kashmir Operations 1947-48)

L/NK Karan Singh, Sikh Regiment
October 1948 (Kashmir Operations 1947-48)

Naik Jadunath Singh, Rajput Regiment
Posthumous—December 1948 (Kashmir Operations 1947-48)

Captain Gurbachan Singh Salaria, Gorkha Rifles
Posthumous—December 1961 (Congo)

Major Dhan Singh Thapa, Gorkha Rifles
October 1962 (Ladakh)

Subedar Joginder Singh, Sikh Regiment
Posthumous—October 1962 (NEFA)

Major Shaitan Singh,Kumaon Regiment
Posthumous—November 1962 (Ladakh)

Comb Abdul Hamid, Grenadiers
Posthumous—September 1965 (Operation against Pakistan)

Lt Col AB Tarapore, Poona Horse
Posthumous—September 1965 (Operation against Pakistan)

Major Hoshiar Singh, Grenadiers
December 1971 (Indo-Pakistan conflict)

2/Lt Arun Khetarpal, 17 Poona Horse
Posthumous—December 1971 (Indo-Pakistan conflict)

L/NK Albert Ekka, Brigade of the Guards
Posthumous December 1971 (Indo-Pakistan conflict)

Flying Officer Nirmal Jit Singh Sekhon, Flying Branch (Pilot)
Posthumous—December 1971 (Indo-Pakistan conflict)

Naib Subedar Bana Singh, J and K Light Infantry,
June 1987 (Operations in Siachen Glacier)

Major Ramaswamy Parameswaran, Mahar Regiment
Posthumous-November 1987 (IPKF Operations in Sri Lanka)

HEIGHT OF SOME IMPORTANT INDIAN PEAKS

Peak	*Height in metre above Mean Sea Level*
1. K^2	8,611
2. Kanchen Junga	8,598
3. Nanga Parbat	8,126
4. Gasher Brum	8,068 In Pak—occupied territory
5. Broad Peak	8,047 -do-
6. Disteghil Sar	7,885 -do-
7. Masher Brum E	7,821
8. Nanda Devi	7,817
9. Masher Brum W	7,806 In Pak—occupied territory
10. Rakaposhi	7,788 -do-
11. Kamet	7,756
12. Saser Kangri	7,672

Peak	Height in metre above Mean Sea Level
13. Skyang Kangri	7,544 In Pak—occupied territory
14. Sia Kangri	7,422 -do-
15. Chaukhamba (Badrinath Peak)	7,138
16. Trisul West	7,138
17. Nunkun	7,135
18. Pauhunri	7,128
19. Kangto	7,090
20. Dunagiri	7,066

LENGTH OF SOME IMPORTANT INDIAN RIVERS

River	Length (km)
1. Indus	2,900
2. Brahmaputra	2,900
3. Ganga	2,510
4. Godavari	1,450
5. Narmada	1,290
6. Krishna	1,290
7. Mahanadi	890
8. Cauveri	760

NATIONAL HIGHWAYS AND THEIR LENGTHS

	National Highway No.	Route	State through which passing and length (km)
1.	1	Delhi-Ambala-Jalandhar-Delhi-Amritsar-Indo-Pak Border	Delhi (22), Haryana (180) Punjab (254); Total 456
2.	1A	Jalandhar-Madhopur-Jammu-Banihal-Srinagar-Baramula-Uri	Punjab (108), Himachal Pradesh (14), Jammu and Kashmir (541); Total 663
3.	1B	Batote-Doda-Kishtwar	Jammu and Kashmir (107); Total 107
4.	2	Delhi-Mathura-Agra-Kanpur-Allahabad-Varanasi-Mohania-Barhi-Palsit-Baidyabati-Bara-Calcutta	Delhi (19), Haryana (74), Uttar Pradesh (770), Bihar (392), West Bengal (235); Total 1,490
5.	3	Agra-Gwalior-Shivpuri-Indore-Dhule-Nasik-Thane-Bombay	Uttar Pradesh (26), Rajasthan (32), Madhya Pradesh (712), Maharashtra (391); Total 1,161
6.	4	Junction with National Highway No 3 near Thane-Pune-Belgaum-Hubli-Bangalore-Ranipet-Madras	Maharashtra (371), Karnataka (658), Andhra Pradesh, (83), Tamil Nadu (123); Total 1,235
7.	4A	Belgaum- Anmod-Ponda-Panaji	Karnataka (82), Goa (71); Total 153

	National Highway No.	Route	State through which passing and length (km)
8.	4B	Nhava Sheva-Kalamboli-Palspe	Maharashtra (27); Total 27
9.	5	Junction with National Highway No 6 near Baharagora-Cuttack-Bhubaneshwar-Vishakhapatnam-Vijayawada-Madras	Orissa (488), Andhra Pradesh (1,000), Tamil Nadu (45), Total 1,533
10.	5A	Junction with National Highway No 6 near Haridaspur-Paradip Port	Orissa (77), Total 77
11.	6	Dhule-Nagpur-Raipur-Sambalpur-Baharagora-Calcutta	Maharashtra (686), Madhya Pradesh (314), Orissa (462), Bihar (22) West Bengal (161), Total 1,645
12.	7	Varanasi-Mangawan-Rewa-Jabalpur-Lakhnadon-Nagpur-Hyderabad-Kurnool-Bangalore-Krishnagiri-Salem-Dindigul-Madurai-Cape Comorin (Kanniyakumari)	Uttar Pradesh (128), Madhya Pradesh (504), Maharashtra (232), Andhra Pradesh (753), Karnataka (125), Tamil Nadu (627); Total 2,369
13.	7A	Palyankotta-Tuticorin Port	Tamil Nadu (51); Total 51
14	8	Delhi-Jaipur-Ajmer-Udaipur-Ahmadabad-Vadodara-Bombay	Delhi (13), Haryana (101), Rajasthan (688), Gujarat (498), Maharashtra (128); Total 1,428
15.	8A	Ahmadabad-Limbdi-Morvi-Kandla	Gujarat (378); Total 378
16.	8B	Bamanbore-Rajkot-Porbander	Gujarat (206), Total 206
17.	8C	Chiloda-Gandhinagar-Sarkhej	Gujarat (46); Total 46
18.	9	Pune-Sholapur-Hyderabad-Vijayawada	Maharashtra (336), Karnataka (75), Andhra Pradesh (380); Total 791
19.	10	Delhi-Fazilka-Indo-Pak Border	Delhi (18), Haryana (313), Punjab (72); Total 403
20.	11	Agra-Jaipur-Bikaner	Uttar Pradesh (51), Rajasthan (531), Total 582
21.	12	Jabalpur-Bhopal-Biaora-Rajgarh-Khilchipur-Aklera-Jhalawar-Kota-Bundi-Devli-Tonk-Jaipur	Madhya Pradesh (490), Rajasthan (400); Total 890
22.	13	Sholapur-Chitradurga	Maharashtra (43), Karnataka (448), Total 491
23.	15	Pathankot-Amritsar-Bhatinda-Ganganagar-Bikaner-Jaisalmer-Barmer-Samakhiali (near Kandla)	Punjab (350), Rajasthan (906), Gujarat (270); Total 1,526
24.	17	Panvel-Mahad-Panaji-Karwar-Mangalore-Cannanore-Calicut-(Kozhikode)-Ferokh-Kuttipuram-Pudu Ponnani-Chowghat-Cranganur-Junction with National Highway No 47 near Edapally	Maharashtra (482), Goa (139), Karnataka (280), Kerala (368); Total 1,269
25.	17A	Junction with National Highway No 17 Near Cortalin-Marmugao	Goa (19); Total 19
26.	21	Junction with National Highway No 22 near Chandigarh-Ropar-Bilaspur-Mandi-Kulu-Manali	Chandigarh (24), Punjab (67), Himachal Pradesh (232); Total 323
27.	22	Ambala-Kalka-Shimla-Narkanda-Rampur-Chini-Indo-Tibet Border near Shipkila	Haryana (30), Punjab (31), Himachal Pradesh (398); Total 459
28.	23	Chas-Ranchi-Rourkela-Talcher Junction with National Highway No 42	Bihar (250), Orissa (209); Total 459

National Highway No.	*Route*	*State through which passing and length (km)*
29. 24	Delhi-Bareilly-Lucknow	Delhi (8), Uttar Pradesh (430); Total 438
30. 25	Lucknow-Kanpur-Jhansi-Shivpuri	Uttar Pradesh (237), Madhya Pradesh (82); Total 319
31. 26	Jhansi-Lakhnadon	Uttar Pradesh (128), Madhya Pradesh (268); Total 396
32. 27	Allahabad-Mangawan	Uttar Pradesh (43), Madhya Pradesh (50); Total 93
33. 28	Junction with National Highway No 31 near Barauni-Muzaffarpur-Pipra-Gorakhpur-Lucknow	Bihar (259), Uttar Pradesh (311); Total 570
34. 28A	Junction with National Highway No 28 near Pipra-Sagauli-Raxaul-Indo-Nepal Border	Bihar (68); Total 68
35. 29	Gorakhpur-Ghazipur-Varanasi	Uttar Pradesh (196); Total 196
36. 30	Junction with National Highway No 2 near Mohania-Patna-Bakhtiyarpur	Bihar (230); Total 230
37. 31	Junction with National Highway No 2 near Barhi-Bakhtiyarpur-Mokameh-Purne-Dalkola-Siliguri-Sivok-Koch Bihar-North Salmara-Nalbari-Charali Amingaon-Junction with National Highway No 37	Bihar (437), West Bengal (366), Assam (322); Total 1,125
38. 31A	Sivok-Gangtok	West Bengal (30), Sikkim (62); Total 92
39. 31B	North Salmara-Junction with National Highway No 37 near Jogigopa.	Assam (19); Total 19
40. 31C	Near Galgalia-Baghdogra-Chalsa-Nagrakata-Goyerkata-Dalgaon-Hasimara-Rajabhat-Khawa-Kochugaon-Sidili-Junction with National Highway No 31 near Bijni	West Bengal (142), Assam (93); Total 235
41. 32	Junction with National Highway No 2 near Gobindpur-Dhanbad-Jamshedpur	Bihar (107), West Bengal (72); Total 179
42. 33	Junction with National Highway No 2 near Barhi-Ranchi-Junction with National Highway No 6 near Baharagora	Bihar (352); Total 352
43. 34	Junction with National Highway No 31 near Dalkola-Berhampore-Barasat-Calcutta	West Bengal (443); Total 443
44. 35	Barasat-Bangaon-Indo-Bangladesh Border	West Bengal (61); Total 61
45. 36	Nowgong-Debaka-Dimapur (Manipur Road)	Assam (167), Nagaland (3); Total 170
46. 37	Junction with National Highway No 31 B near Goalpara-Guwahati-Jorabat-Kamargaon-Mukum-Saikhoaghat	Assam (680); Total 680
47. 37A	Kuarital-Junction with National Highway No 52 near Tezpur	Assam (23);Total 23
48. 38	Mukum-Ledo-Lekhapani	Assam (54); Total 54
49. 39	Numaligarh-Imphal-Palel-Indo-Burma Border	Assam (115), Nagaland (110), Manipur (211); Total 436

	National Highway No.	*Route*	*State through which passing and length (km)*
50.	40	Jorabat-Shillong-Indo-Bangladesh Border near Dawki	Meghalaya (161); Total 161
51.	41	Junction with National Highway No 6 near Kolaghat-Haldia Port	West Bengal (51); Total 51
52.	42	Junction with National Highway No 6 near Sambalpur-Angul-Junction with National Highway No 5 near Cuttack	Orissa (261); Total 261
53.	43	Raipur-Vizianagaram-Junction with National Highway No 5	Madhya Pradesh (316), Orissa (152), Andhra Pradesh (83); Total 551
54.	44	Shillong-Passi Badarpur-Agartala	Meghalaya (184), Assam (111), Tripura (200); Total 495
55.	45	Madras-Tiruchirapalli-Dindigul	Tamil Nadu (387); Total 387
56.	45A	Link to Pondicherry(Villupuram-Pondicherry)	Tamil Nadu (17), Pondicherry (23), Total 40
57.	46	Krishnagiri-Ranipet	Tamil Nadu (132); Total 132
58.	47	Salem-Coimbatore-Trichur-Ernakulam-Trivandrum-Cape Comorin (Kanniyakumari)	Tamil Nadu (224), Kerala (416); Total 640
59.	47A	Junction with National Highway No 47 Willington Island	Kerala (6), Total 6
60.	48	Bangalore-Hassan-Mangalore	Karnataka (328), Total 328
61.	49	Madurai-Dhanushkodi	Tamil Nadu (160), Total 160
62.	50	Nasik-Junction with National Highway No 4 near Pune	Maharashtra (192), Total 192
63.	51	Paikan-Tura-Dalu	Assam (22), Mehgalaya (127); Total 149
64.	52	Baihata Charali-Tezpur-Bander Dewa-North Lakhimpur-Pasighat-Teza-Sitapani-Junction with National Highway No 37 near Saikhoaghat	Assam (540), Arunachal Pradesh (310) Total 850
65.	52	Bander Dewa-Itanagar	Assam (5); Arunachal Pradesh (20), Total
66.	53	Junction with National Highway No 44 near Badarpur-Jirighat-Imphal-Silchar	Assam (100), Manipur (220); Total 320
67.	54	Silchar-Aizawl-Tuipang	Assam (45), Mizoram (515), Total 560
68.	54A	Theriat-Lunglei	Mizoram (9); Total 9
69.	54B	Venus Saddle Saiha	Mizoram (27); Total 27
70.	56	Lucknow-Varanasi	Uttar Pradesh (285); Total 285
71	NE 1	Ahmadabad-Vadodara	Gujarat (93); Total 93
		Total Length	32,138 km

IMPORTANT LONG DISTANCE TRAINS

The Indian Railways run on an average about 900 Mail/Express trains connecting important cities, state capitals, pilgrim centres, etc. Some of the trains cover distance of over 3,000 km in one scheduled trip. The important long distance trains between selected pair of points are:

Number and Name of the Train	*Pair of stations between which it runs*	*Distance (km)*
1. 907/908 Himsagar Express	Kanniyakumari-Jammu (weekly)	3,787
2 901/902 Express	Guwahati-Trivandrum (weekly)	3,574
3. 125/126 Kerala Express	New Delhi-Trivandrum	3,054
4. 911/912 Express	Gorakhpur-Cochin (weekly)	2,991
5. 903/904 Express	Ahmadabad-Trivandrum (weekly)	2,720
6. 945/946 Express	Bombay-Guwahati (weekly)	2,684
7 127/128 Karnataka Express	New Delhi-Bangalore	2,444
8. 915/916 New Delhi-Puri Express	New Delhi-Puri (4 days a week)	1,782
9 81/82 Kanniyakumari Express	Bombay VT-Kanniyakumari	2,149
10. 15/16 GT Express	New Delhi-Madras	2,194
11. 121/122 Tamil Nadu Express	New Delhi-Madras	2,194
12. 171/172 Express	Jammu Tawi-Bombay Central	1,973
13 59/60 Gitanjali Express	Bombay VT-Howrah (5 days a week)	1,968
14. 173/174 Himgiri Express	Jammu Tawi-Howrah (tri-weekly)	2,063
15. 921/922 North-East Express	New Delhi-Guwahati	2,048
16. 3/4 Frontier Mail	Amritsar-Bombay Central	1,900
17. 25/26 Deluxe Express	Amritsar-Bombay Central	1,835
18. 1/2 Kalka Mail	Kalka-Howrah	1,719
19. 123/124 AP Express	New Delhi-Secunderabad	1,665
20. 141/142 Coromandal Express	Howrah-Madras	1,663
21. 101/102 Rajdhani Express	New Delhi-Howrah (5 days a week)	1,441
22. 151/152 Rajdhani Express	New Delhi-Bombay Central (5 days a week)	1,384
23. 11/12 Express	Dadar-Madras	1,270
24. 19/20 Konark Express	Bhubaneshwar-Secunderabad	1.144
25. 181/182 Sarvodaya Express	New Delhi-Ahmadabad (bi-weekly)	1,092
26. 191/192 Magadh Express	New Delhi-Patna	992
27. 167/168 Malwa Express	New Delhi-Indore	969
28. 505/506 Ashram Express (MG)	Delhi-Ahmadabad (4 days a week)	934
29. 101/102 Minar Express	Secunderabad-Bombay VT	800
30. 15/16 Chetak Express	Delhi—Udaipur	739
31. 57/58 Kanchenjunga Express	Howarh-New Jaipaiguri (3 days a week)	639
32. 91/92 Prayagraj Express	New Delhi-Allahabad	627
33. 509/510 Mandor Express (MG)	Jodhpur-Delhi	626
34. 119/120 Gomti Express	New Delhi-Lucknow	503
35. 135/136 Vaigai Express (MG)	Madras Egmore-Madurai	492
36. 507/508 Marwar Express (MG)	Ahmadabad-Jodhpur	455
37. 79/80 Taj Express	New Delhi-Gwalior (6 days a week)	317
38. 501/502 Pink City Express (MG)	Delhi-Jaipur	308
39. 39/40 Brindavan Express	Madras-Bangalore	358
40. 103/104 Pearl City Express (MG)	Madras-Tuticorin	655
41. 305/306 Deccan Express	Bombay VT—Pune	192
42. 21/22 Flying Ranee Express	Bombay Central-Surat	262

Number and Name of the Train	Pair of stations between which it runs	Distance (km)
43. 197/198 Shan-e-Panjab	Amritsar-New Delhi	447
44. 11/12 Barak Valley Express	Guwahati-Silchar	397
45 2001/2002 Shatabdi Express	New Delhi-Jhansi	414

AMENDMENTS TO THE CONSITUTION

1. *The Constitution (First Amendment) Act, 1950.*— This amendment provided for several new grounds of restrictions to the right to freedom of speech and expression and the right to practise any profession or to carry on any trade or business as contained in article 19 of the Constitution. These restrictions related to public order, friendly relations with foreign States or incitement to an offence in relation to the right to freedom of speech, and to the prescribing of professional or technical qualifications or the carrying on by the State, etc., of any trade, business, industry or service in relation to the right to carry on any trade or business The amendment also inserted two new articles, 31 A and 31B and the Ninth Schedule to give protection from challenge to land reforms laws

2. *The Constitution (Second Amendment) Act, 1952.*—By this amendment, the scale of representation for election to Lok Sabha was readjusted.

3 *The Constitution (Third Amendment) Act, 1954.*—This amendment substituted entry 33 of List III (Concurrent List) of the Seventh Schedule to make it correspond to article 369

4. *The Constitution (Fourth Amendment) Act, 1955.*—Article 31 (2) of the Constitution was amended to re-state more precisely the State's power of compulsory acquisition and requisitioning of private property and distinguish it from cases where the operation of regulatory or prohibitory laws of the State results in "deprivation of property". Article 31 A of the Constitution was also amended to extend its scope to cover categories of essential welfare legislation like abolition of *zamindaris*, proper planning of urban and rural areas and for effecting a full control over the mineral and oil resources of the country, etc. Six Acts were also included in the Ninth Schedule. Article 305 was also amended to save certain laws providing for State monopolies.

5. *The Constitution (Fifth Amendment) Act, 1955.*—This amendment made a change in article 3 so as to empower the President to specify a time limit for the State Legislatures to convey their views on the proposed Central laws affecting the areas, boundaries, etc., of their States

6. *The Constitution (Sixth Amendment) Act, 1956*—This amendment made some changes in articles 269 and 286 relating to taxes on sale and purchase of goods in the course of inter-State trade and commerce. A new entry 92A was added to the Union List of the Seventh Schedule to the Constitution.

7. *The Constitution (Seventh Amendment) Act, 1956.*—This amendment Act purported to give effect to the recommendations of the States Reorganisation Commission and the necessary consequential changes. Broadly the then existing States and territories were changed to have two-fold classification of States and Union Territories. The amendments also provided for composition of the House of the People, re-adjustment after every census, provisions regarding the establishment of new High Courts, High Court Judges, etc.

8. *The Constitution (Eighth Amendment) Act, 1960.*—Article 334 was amended with a view to extending the period of reservation of seats for Scheduled Castes and Scheduled Tribes, and to the Anglo-Indian community by nomination, in Parliament and in the State Legislatures for a further period of ten years.

9. *The Constitution (Ninth Amendment) Act, 1960.*—The purport of this amendment is to give effect to the transfer of certain territories to Pakistan in pursuance of the agreement entered into between the Governments of India and Pakistan. This amendment was necessitated in view of the judgment of the Supreme Court in "In re Berubari Union" by which it was held that any agreement

to cede a territory to another country could not be implemented by a law made under article 3 but would only be implemented by an amendment of the Constitution.

10. *The Constitution (Tenth Amendment) Act, 1961.*—This Act amended article 240 and the First Schedule in order to include the areas of Dadra and Nagar Haveli as a union territory and to provide for its administration under the regulation making powers of the President.

11. *The Constitution (Eleventh Amendment) Act, 1961.*—The purpose of this amendment was to amend articles 66 and 71 of the Constitution to provide that the election of the President or the Vice President could not be challenged on the ground of any vacancy in the appropriate electoral college.

12. *The Constitution (Twelfth Amendment) Act, 1962.*—This amendment sought to include Goa, Daman and Diu as a Union Territory and to amend article 240 for the purpose.

13. *The Constitution (Thirteenth Amendment) Act, 1962.*—By this amendment, a new article 371A was added to make special provisions with respect to the State of Nagaland in pursuance of an agreement between the Government of India and the Naga People's Convention.

14. *The Constitution (Fourteenth Amendment) Act, 1962.*—By this Act Pondicherry was included in the First Schedule as a Union Territory, and this Act had also enabled the creation of legislature by Parliamentary law for the union territories of Himachal Pradesh, Manipur, Tripura, Goa, Daman and Diu and Pondicherry.

15. *The Constitution (Fifteenth Amendment) Act, 1963.*—This amendment provided for the increase in the age of retirement of High Court Judge and for the provision of compensatory allowance to judges who are transferred from one High Court to another. The Act also provided for the appointment of retired Judges to act as Judges of the High Court. Article 226 was also enlarged to empower the High Courts to issue directions, orders or writs to any Government authority, etc., if the cause of action for the exercise of such power arose in the territories wherein the High Court exercises jurisdiction notwithstanding that the seat of such Government authority is not within those territories. The Act also provided for the exercise of the powers of the Chairmen of the Service Commissions, in their absence, by one of their Members.

16 *The Constitution (Sixteenth Amendment) Act, 1963.*—Article 19 was amended by this Act to impose further restrictions on the rights to freedom of speech and expression, to assemble peaceably and without arms and to form associations, in the interests of sovereignty and integrity of India. The oath of affirmation to be subscribed by candidates seeking election to Parliament and the State legislatures have been amended to include as one of the conditions that they will uphold the sovereignty and integrity of India. The amendments are intended to promote national integration.

17. *The Constitution (Seventeenth Amendment) Act, 1964.*—Article 31A was further amended to prohibit the acquisition of land under personal cultivation unless the market value of the land is paid as compensation and the definition of "estate" as contained in that article had also been enlarged with retrospective effect. The Ninth Schedule had also been amended to include 44 more Acts.

18. *The Constitition (Eighteenth Amendment) Act, 1966.*—Article 3 was amended by this Act to specify that the expression "State" will include a union territory also and to make it clear that the power to form a new state under this article includes a power to form a new state or union territory by uniting a part of a state or a union territory to another state or union territory.

19. *The Constitution (Nineteenth Amendment) Act, 1966.*—Article 324 was amended to effect a consequential change as a result of the decision to abolish Election Tribunals and to hear election petitions by High Courts.

20. *The Constitution (Twentieth Amendment) Act, 1966.*—This amendment was necessitated by the decision of the Supreme Court in Chadramohan *vs.* State of Uttar Pradesh in which certain appointments of District Judges in the State of Uttar Pradesh were declared void by the Supreme Court. A new article 233A was added and the appointments made by the Governor were validated.

21. *The Constitition (Twenty-first Amendment) Act, 1967.*—By this amendment, Sindhi language was included in the Eighth Schedule.

22. *The Constitution (Twenty-second Amendment) Act, 1969.*— This Act was enacted to facilitate the formation of a new autonomous State of Meghalaya within the State of Assam.

23. *The Constitution (Twenty-third Amendment) Act, 1969.*— Article 334 was amended so as to extend the safeguards in respect of reservation of seats in Parliament and State Legislatures for the

Scheduled Castes and the Scheduled Tribes as well as for the Anglo-Indians for a further period of ten years.

24. *The Constitution (Twenty-fourth Amendment) Act, 1971.*—This amendment was passed in the context of a situation that emerged with the verdict in Golaknath's case by the Supreme Court. Accordingly, this Act amended article 13 and article 368 to remove all doubts regarding the power of Parliament to amend the Constitution including the Fundamental Rights.

25. *The Constitution (Twenty-fifth Amendment) Act, 1971.*—This amendment further amended article 31 in the wake of the Bank Nationalisation case. The word 'amount' was substituted in place of 'compensation' in the light of the judicial interpretation of the word 'compensation' meaning "adequate compensation".

26. *The Constitution (Twenty-sixth Amendment) Act, 1971.*—By this amendment, the privy and privileges of the former rulers of Indian States were abolished This amendment was passed as a result of the Supreme Court decision in Madhav Rao's case

27. *The Constitution (Twenty-seventh Amendment) Act, 1971.*—This amendment was passed to provide for certain matters necessitated by the reorganisation of the North-Eastern States. A new article 239B was inserted which enabled the promulgation of Ordinances by the Administrators of certain union territories.

28. *The Constitution (Twenty-eighth Amendment) Act, 1972.*—The amendment was enacted to abolish the special privileges of the members of the Indian Civil Service in matters of leave, pension and rights as regard to disciplinary matters.

29. *The Constitution (Twenty-ninth Amendment) Act, 1972.*—The Ninth Schedule to the Constitution was amended to include therein two Kerala Acts on Land Reforms.

30. *The Constitution (Thirtieth Amendment) Act, 1972.*—The purpose of the amendment was to amend article 133 in order to do away with the valuation test of Rs 20,000 as fixed therein, and to provide instead for an appeal to the Supreme Court in civil proceedings only on a certificate issued by the High Court that the case involves a substantial question of law of general importance and that in the opinion of the High Court, the question needs to be decided by the Supreme Court.

31. *The Constitution (Thirty-first Amendment) Act, 1973.*—This Act *inter alia* raises the upper limit for the representation of the states in the Lok Sabha from 500 to 525 and reducing the upper limit for the representation of the union territories from 25 members to 20.

32. *The Constitution (Thirty-second Amendment) Act, 1973.*—This Act provided the necessary constitutional authority for giving effect to the provision of equal opportunities to different areas of the State of Andhra Pradesh and for the constitution of an Administrative Tribunal with jurisdiction to deal with grievances relating to public services. It also empowered Parliament to legislate for the establishment of a Central University in that State.

33. *The Constitution (Thirty-third Amendment) Act, 1974.*—By this amendment, articles 101 and 190 were amended in order to streamline the procedure for resignation by Members of Parliament and State Legislatures.

34. *The Constitution (Thirty-fourth Amendment) Act, 1974.*—By this Act twenty more land tenure and land reforms laws enacted by various State Legislatures were included in the Ninth Schedule.

35. *The Constitution (Thirty-fifth Amendment) Act, 1974.*—By this Act, a new article 2A was added thereby conferring on Sikkim the status of an associate State of the Indian Union. Consequent amendments were made to articles 80 and 81. A new Schedule *i.e.*, Tenth Schedule, was added laying down the terms and conditions of association of Sikkim with the Union.

36. *The Constitution (Thirty-sixth Amendment) Act, 1975.*—This was enacted to make Sikkim a full-fledged State of the Indian Union and to include it in the First Schedule to the Constitution and to allot to Sikkim one seat each in the Council of State and in the House of the People. Article 2A and the Tenth Schedule inserted by the Constitution (Thirty-fifth Amendment) Act were omitted and articles 80 and 81 were suitably amended.

37. *The Constitution (Thirty-seventh Amendment) Act, 1975.*—By this Act, the Union Territory of Arunachal Pradesh was provided with a Legislative Assembly. Article 240 of the Constitution was also amended to provide that as in the case of other Union Territories with legislatures, the power of

President to make regulations for the Union Territory of Arunachal Pradesh may be exercised only when the assembly is either dissolved or its functions remain suspended.

38. *The Constitution (Thirty-eighth Amendment) Act, 1975.*—This Act amended articles 123,213 and 352 of the Constitution to provide that the satisfaction of the President or the Governor contained in these articles would be called in question in any court of law.

39. *The Constitution (Thirty-ninth Amendment) Act, 1975.*—By this Act, disputes relating to the election of the President, Vice President, Prime Minister and the Speaker are to be determined by such authority as may be determined by Parliamentary law. Certain Central enactments were also included in the Ninth Schedule by this Act.

40. *The Constitution (Fortieth Amendment) Act, 1976.*—This Act provided for vesting in the Union of all mines, minerals and other things of value underlying the ocean within the territorial waters, or the continental shelf or the exclusive economic zone of India. It further provided that all other resources of the exclusive economic zone of India shall also vest in the Union. This Act also provided that the limits of the territorial waters, the continental shelf, the exclusive economic zone and the maritime zones of India shall be as specified from time to time by or under any law made by Parliament. Also some more Acts were added to the Ninth Schedule.

41. *The Constitution (Forty-first Amendment) Act, 1976.*—By this Act, article 316 was amended to raise the retirement age of Members of the State Public Service Commissions and Joint Public Service Commissions from 60 to 62 years.

42. *The Constitution (Forty-second Amendment) Act, 1976.*—This Act made a number of important amendments in the Constitution. These amendments were mainly for purpose of giving effect to the recommendations of the Swaran Singh Committee.

Some of the important amendments made are for the purpose of spelling out expressly the high ideals of socialism, secularism and the integrity of the nation, to make the Directive Principles more comprehensive and giving them precedence over those Fundamental Rights which have been allowed to be relied upon to frustrate socio-economic reforms. The amendment Act also inserted a new chapter on the Fundamental Duties of the citizens and made special provisions for dealing with anti-national activities, whether by individuals or by associations. The judiciary provisions were also amended by providing for a requirement as to the minimum number of Judges for determining question as to the constitutional validity of laws and for a special majority of not less than two-third for declaring any law to be constitutionally invalid.

To reduce the mounting arrears in High Courts and to secure the speedy disposal of service matters, revenue matters and certain other matters of special importance in the context of the socio-economic development and progress, this amendment Act provided for the creation of Administrative and other Tribunals for dealing with such matters while preserving the jurisdiction of the Supreme Court in regard to such matters under article 136 of the Constitution. Certain modifications in the writ jurisdiction of the High Courts under article 226 were also made.

43. *The Constitution (Forty-third Amendment) Act, 1977.*—This Act *inter alia* provided for the restoration of the jurisdiction of the Supreme Court and High Courts, curtailed by the enactment of the Constitution (Forty-second Amendment) Act, 1976 and accordingly articles, 32A, 131A, 144A, 226A and 228A included in the Constitution by the said amendment, were omitted by this Act. The Act also provided for the omission of article 31 D which conferred special powers on Parliament to enact certain laws in respect of anti-national activities.

44. *The Constitution (Forty-fourth Amendment) Act, 1978.*—The right to property which had been the occasion for more than one amendment of Constitution was omitted as a Fundamental Right and it was made only as a legal right. It was, however, ensured that the removal of the right to property from the list of Fundamental Rights would not affect the right of minorities to establish and administer educational institutions of their choice. Article 352 of the Constitution was amended to provide "armed rebellion" as one of the circumstances for the declaration of emergency. Internal disturbance not amounting to armed rebellion would not be a ground for the issuance of a Proclamation. The right to personal liberty as contained in articles 21 and 22 is further strengthened by the provision that a law for preventive detention cannot authorise, in any case, detention for a longer period than two months unless an Advisory Board has reported that there is sufficient cause

for such detention. The additional safeguard has also been provided by the requirement that the Chairman of an Advisory Board shall be a serving judge of the appropriate High Court and that Board shall be constituted in accordance with the recommendations of the Chief Justice of that High Court.

With a view to avoiding delays, articles 132, 133 and 134 were amended and a new article 134 A was insterted to provide that a High Court should consider the question of granting a certificate for appeal to Supreme Court immediately after the delivery of the judgment, final order or sentence concerned on the basis of an oral application by a party or, if the High Court deems fit so to do, on its own. The other amendments made by the Act are mainly for removing or correcting the distortions which came into the Constitution by reason of the amendments initiated during the period of internal emergency.

45. *The Constitution (Forty-fifth Amendment) Act, 1980.*—This was passed to extend safeguards in respect of reservation of seats in Parliament and State Assemblies for Scheduled Castes, Scheduled Tribes as well as for Anglo-Indians for a further period of ten years.

46 *The Constitution (Forty-sixth Amendment) Act, 1982.*—Article 269 was amended so that the tax levied on the consignment of goods in the course of inter-State trade or commerce shall be assigned to the states. This article was also amended to enable Parliament to formulate by law principles for determining when a consignment of goods takes place in the course of inter-State trade or commerce. A new entry 92B was also inserted in the Union List to enable the levy of tax on the consignment of goods where such consignment takes place in the course of inter-State trade or commerce.

Clause (3) of article 286 was amended to enable Parliament to specify, by law, restrictions and conditions in regard to the system of levy, rates and other incidence of tax on the transfer of goods involved in the execution of a works contract, on the delivery of goods on hire-purchase or any system of payment by instalments etc.

Article 366 was also suitably amended to insert a definition of "tax on the sale or purchase of goods" to include transfer for consideration of controlled commodities, transfer of property in goods involved in the execution of a works contiact, delivery of goods on hire-purchase or any system of payment by instalments etc

47. *The Constitution (Forty-seventh Amendment) Act, 1984.*—This amendment is intended to provide for the inclusion of certain land reforms Acts in the Ninth Schedule to the Constitution with a view to obviating the scope of litigation hampering the implementation process of those Acts.

48. *The Constitution (Forty-eighth Amendment) Act, 1984.*—The proclamation issued by the President under article 356 of the Constitution with respect to the State of Punjab cannot be continued in force for more than one year unless the special conditions mentioned in clause (5) of the said article are satisfied. As it is felt that the continued force of the said proclamation is necessary, therefore, the present amendment has been effected so as to make the conditions mentioned in clause (5) of article 356 inapplicable in the instant case.

49. *The Constitution (Forty-ninth Amendment) Act, 1984.*—The Government of Tripura recommended that the provisions of the Sixth Schedule to the Constitution may be made applicable to the tribal areas of that State. The amendment involved in this Act is intended to give a constitutional security to the autonomous District Council functioning in the State.

50. *The Constitution (Fiftieth Amendment) Act, 1984.*—By article 33 of the Constitution, Parliament is empowered to enact laws determining to what extent any of the rights conferred by Part III of the Constitution shall, in their application to the members of the Armed Forces or the Forces charged with the maintenance of public order, be restricted or abrogated so as to ensure the proper discharge of their duties and the maintenance of discipline among them.

It is proposed to amend article 33 so as to bring within its ambit—

(i) the members of the Forces charged with the protection of property belonging to, or in the charge or possession, of the State; or

(ii) persons employed in any bureau or other organisation established by the State for purposes of intelligence or counter-intelligence; or

(iii) persons employed in, or in connection with, the telecommunication systems set up for the purposes of any Force, bureau or organisation.

Experience has revealed that the need for ensuring proper discharge of their duties and the maintenance of discipline among them is of paramount importance in the national interest.

51. *The Constitution (Fifty-first Amendment) Act, 1984.*—Article 330 has been amended by this Act for providing reservation of seats for the scheduled tribes in Meghalaya, Nagaland, Arunachal Pradesh and Mizoram in the Parliament and article 332 has been amended to provide similar reservation in the legislative assemblies of Nagaland and Meghalaya to meet the aspirations of the local tribal population.

52. *The Constitution (Fifty-second Amendment) Act, 1985.*—It amends Constitution to provide that a member of Parliament or a State Legislature who defects or is expelled from the Party which set him up as a candidate in the election or if an independent member of the House joins a political party after expiry of six months from the date on which he takes seat in the House shall be disqualified to remain a member of the House. The Act also makes suitable provisions with respect to splits in, and merger of political parties.

53. *The Constitution (Fifty-third Amendment) Act, 1986.*—This has been enacted to give effect to the Memorandum of Settlement of Mizoram which was signed by the Government of India and the Government of Mizoram with the Mizoram National Front on 30 June 1986. For this purpose, a new article 371G has been inserted in the Constitution *inter alia* preventing application of any Act of Parliament in the State of Mizoram in respect of religious or social practices of the Mizos, Mizos' Customary law and procedure. Administration of civil and criminal practice involving decisions according to Mizos' Customary law and ownership and transfer of land unless a resolution is passed in the Legislative Assembly to that effect. This, however, will not apply to any Central Act already in force in the State of Mizoram before the commencement of this amendment. The new article also provides that the Legislative Assembly of Mizoram shall consist of not less than forty members.

54. *The Constitution (Fifty-fourth Amendment) Act, 1986.*—The Act increases the salaries of the Supreme Court and High Court Judges as detailed below:—

Chief Justice of India . .	Rs 10,000 per month
Judges of the Supreme Court . .	Rs 9,000 per month
Chief Justice of the High Court .	Rs 9,000 per month
Judges of a High Court . .	Rs 8,000 per month

This Act amended Part 'D' of the Second Schedule to the Constitution to give effect to the above increases in the salaries of Judges and to make an enabling provision in articles 125 and 221 to provide for changes in the salaries of Judges in future by Parliament by law.

55. *The Constitution (Fifty-fifth Amendment) Act, 1986.*—This seeks to give effect to the proposal of the Government of India to confer statehood on the Union Territory of Arunachal Pradesh and for this purpose, a new article 371H has been inserted which, *inter alia,* confers, having regard to the sensitive location of Arunachal Pradesh, to vest special responsibility on the Governor of the new State of Arunachal Pradesh with respect to law and order in the State and in the discharge of his functions, the Governor shall after consulting the Council of Ministers, exercise his individual judgment, as to the action to be taken and this responsibility shall cease when the President so directs. The new article also provides that the new Legislative Assembly of the new State of Arunachal Pradesh shall consist of not less than thirty members.

56. *The Constitution (Fifty-sixth Amendment) Act, 1987.*—The Government of India has proposed to constitute the territories comprised in the Goa District of the Union territory of Goa, Daman and Diu as the State of Goa and the territories comprised in the Daman and Diu districts of that Union Territory as a new Union Territory of Daman and Diu. In this context, it was proposed that the Legislative Assembly of the new State of Goa shall consist of forty members. The existing

Legislative Assembly of the Union Territory of Goa, Daman and Diu has thirty elected members and three nominated members. It was intended to make this Assembly with the exclusion of two members representing Daman and Diu Districts the provisional Legislative Assembly for the new State of Goa until elections are held on the expiry of the five year term of the existing Assembly. It was, therefore, decided to provide that the Legislative Assembly of the new State of Goa shall consist of not less than 30 members. The special provision required to be made to give effect to this proposal is carried out by this amendment.

57. *The Constitution (Fifty-seventh Amendment) Act, 1987*--The Constitution (Fifty-first Amendment) Act,1984 was enacted to provide for reservation of seats in the House of the People for the Scheduled Tribes in Nagaland, Meghalaya, Mizoram and Arunachal Pradesh and also for reservation of seats for Scheduled Tribes in the Legislative Assemblies of Nagaland and Meghalaya by suitably amending articles 330 and 332. Even though these States are predominantly tribal, the underlying objective of the aforesaid Act was to ensure that the members of the scheduled tribes in these areas do not fail to secure a minimal representation because of their inability to compete with the advanced sections of the people. The Constitution (Fifty-first Amendment) Act, though formally enforced, could not be fully implemented unless parallel action is taken to determine the seats which are to be reserved for Scheduled Tribes in these areas The number of seats reserved for Scheduled Castes and Scheduled Tribes in the Legislative Assembly of any State under article 332 of the Constitution will have to be determined having regard to the provisions of article 332(3) of the Constitution. However, in view of the historical background with respect to the areas comprised in the North-Eastern States, the circumstances obtaining in these areas in the state of development of the Scheduled Tribes and other relevant considerations, it was considered necessary to provide for special arrangements with regard to the reservation for Scheduled Tribes in these areas for a temporary period so as to facilitate easy transition to these areas to the normal arrangements as envisaged in the Constitution. Article 332 of the Constitution was further amended for making a temporary provision, until the re-adjustment of seats on the basis of the first census after the year 2000 under article 170 of the Constitution for these States, for the determination of the number of seats reserved for Scheduled Tribes. This amendment seeks to provide that if all the seats in the Legislative Assembly of such States in existence on the date of coming into force of this Constitution Amendment Act are held by the members of the Scheduled Tribes, all the seats except one shall be reserved for Scheduled Tribes and in any other case such number of seats as bears to the total number of seats a proportion not less than the number of members belonging to the Scheduled Tribes in the existing Assembly bears to the total number of seats in the existing Assembly The Act achieves these objectives.

58. *The Constitution (Fifty-eighth Amendment) Act, 1987* --There has been a general demand for the publication of authoritative text of the Constitution in Hindi. It is imperative to have an authoritative text of the Constitution for facilitating its use in the legal process. Any Hindi version of the Constitution should not only conform to the Hindi translation published by the Constituent Assembly, but should be in conformity with the language, style and terminology adopted in the authoritative texts of Central Acts in Hindi. The Constitution has been amended to empower the President of India to publish under his authority the translation of the Constitution in Hindi signed by the Members of the Constituent Assembly with such modifications as may be necessary to bring it in conformity with the language, style and terminology adopted in the authoritative texts of Central Acts in Hindi language. The President has also been authorised to publish the translation in Hindi of every amendment of the Constitution made in English.

59. *The Constitution (Fifty-ninth Amendment) Act, 1988.*—The Act amends article 356 (5) of the Constitution so as to facilitate the extension of a Presidential Proclamation issued under clause (1) of article 356 beyond a period of one year, if necessary up to a period of three years, as permissible under clause (4) of article 356 with respect to the State of Punjab because of the continued disturbed situation there. The Act also amends article 352 of the Constitution pertaining to the Proclamation of Emergency in its application to the State of Punjab and includes "internal disturbance" as one of the grounds for making a proclamation in respect of the State of Punjab only. As a consequence of amendment in article 352, articles 358 and 359 have also been amended. The amendments in articles

352, 358 and 359 in relation to the State of Punjab will be operative only for a period of two years from 30 March 1988, which is the date of commencement of the amendment.

60. *The Constitution (Sixtieth Amendment) Act, 1988.*—The Act amends clause (2) of article 276 of the Constitution so as to increase the ceiling of taxes on professions, trades, callings and employment from two hundred and fifty rupees per annum to two thousand and five hundred rupees per annum. The upward revision of this tax will help the State Governments in raising additional resources. The proviso to clause (2) has been omitted.

Appendices

GOVERNMENT OF INDIA

(As on 4 July 1989)

President	R Venkataraman
Vice President	Dr Shanker Dayal Sharma
Prime Minister	Rajiv Gandhi

Members of the Council of Ministers

AGRICULTURE

Cabinet Minister	Bhajan Lal	
Minister of State	Shyamlal Yadav	Agriculture and Cooperation
Minister of State	Hari Krishna Shastri	Agricultural Research and Education
Minister of State	Janardan Poojari	Rural Development
Minister of State	R Prabhu	Fertilisers

CIVIL AVIATION AND TOURISM

Minister of State (Independent Charge)	Shivraj Patil

COMMERCE

Cabinet Minister	Dinesh Singh
Minister of State	PR Das Munshi

COMMUNICATIONS

Minister of State (Independent Charge)	Girdhar Gomango

DEFENCE

Cabinet Minister	KC Pant	
Minister of State	DL Baitha	Defence Production and Supplies

ENERGY

Cabinet Minister	Vasant Sathe	
Minister of State	Kalpnath Rai	Power
Minister of State	CK Jaffar Sharief	Coal

ENVIRONMENT AND FORESTS

Cabinet Minister	ZR Ansari
Minister of State	Smt Sumati Oraon

EXTERNAL AFFAIRS

Cabinet Minister	PV Narasimha Rao
Minister of State	K Natwar Singh

FINANCE

Cabinet Minister	SB Chavan	
Minister of State	BK Gadhvi	Expenditure
Minister of State	Ajit Panja	Revenue
Minster of State	Eduardo Faleiro	Economic Affairs

FOOD AND CIVIL SUPPLIES

Minister of State (Independent Charge)	Sukh Ram

FOOD PROCESSING INDUSTRIES

Minister of State (Independent Charge)	Jagdish Tytler

HEALTH AND FAMILY WELFARE

Minister of State (Independent Charge)	Rafique Alam

HOME

Cabinet Minister	Buta Singh
Minister of State	Santosh Mohan Dev
Minister of State	P Chidambaram

HUMAN RESOURCE DEVELOPMENT

Cabinet Minister	P Shiv Shankar	
Minister of State	LP Sahi	Education
Minister of State	Smt Margaret Alva	Youth Affairs and Sports, Women and Child Development
Minister of State	Smt Krishna Sahi	Culture

INDUSTRY

Cabinet Minister	J Vengal Rao	
Minister of State	M Arunachalam	Industrial Development

INFORMATION AND BROADCASTING

Cabinet Minister	HKL Bhagat
Minister of State	S Krishna Kumar
Minister of State	KK Tewary

LABOUR

Cabinet Minister	Bindeshwari Dubey
Minister of State	Radhakrishan Malaviya

LAW AND JUSTICE

Cabinet Minister	B Shankaranand
Minister of State	HR Bhardwaj

PARLIAMENTARY AFFAIRS

Cabinet Minister	HKL Bhagat
Minister of State	MM Jacob
Minister of State	Smt Shiela Dikshit

Minister of State	P Namgyal	
Minister of State	Radhakrishan Malaviya	

PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS

Cabinet Minister	Rajiv Gandhi	
Minister of State	P Chidambaram	

PETROLEUM AND NATURAL GAS

Minister of State (Independent Charge)	Brahm Dutt	

PLANNING

Cabinet Minister	Madhav Sinh Solanki	
Minister of State	Biren Singh Engti	

PROGRAMME IMPLEMENTATION

Cabinet Minister	Madhav Sinh Solanki	
Minister of State	Biren Singh Engti	

RAILWAYS

Minister of State (Independent Charge)	Madhavrao Scindia	

SCIENCE AND TECHNOLOGY

Cabinet Minister	Rajiv Gandhi	
Minister of State	KR Narayanan	Science and Technology, Atomic Energy, Electronics, Ocean Development and Space

STEEL AND MINES

Cabinet Minister	ML Fotedar	
Minister of State	Mahabir Prasad	Mines

SURFACE TANSPORT

Minister of State (Independent Charge)	Rajesh Pilot	

TEXTILES

Cabinet Minister	Ram Niwas Mirdha	
Minister of State	Kum Saroj Khaparde	

URBAN DEVELOPMENT

Cabinet Minister	Smt Mohsina Kidwai	
Minister of State	Dalbir Singh	

WATER RESOURCES

Minister of State (Independent Charge)	MM Jacob	

WELFARE

Minister of State (Independent Charge)	Dr Rajendra Kumari Bajpai	

CIVILIAN AWARDS ANNOUNCED ON 26 JANUARY 1988

Bharat Ratna	The award is given for exceptional work for the advancement of art, literature and science and in recognition of public service of the highest order.
Recipients	Late Marudur Gopalan Ramachandran
Padma Vibhushan	The award is given for exceptional and distinguished service in any field including service rendered by Government servants.
Recipients	1 Dr Kuppali Venkatappagowda Puttappa 2. Late Smt Mahadevi Varma 3 Justice Mirza Hameedullah Beg
Padma Bhushan	The award is given for distinguished service of high order in any field including service rendered by Government servants.
Recipients	1. Abid Hussain 2. Akkineni Nageswara Rao 3 Dr Ashok Sekhar Ganguly 4 Prof Badanaval Venkata Sreekantan 5. Bal Ram Nanda 6. Kartar Singh Duggal 7. Kelu Charan Mohapatra 8. Kushok Bakula 9 Prof (Dr) Pratury Tirumala Rao 10 Prof Ram Prakash Bambah 11. Smt Renuka Ray 12. Col Satya Pal Wahi 13. Shriyans Prasad Jain
Padma Shri	The award is given for distinguished service in any field including service rendered by Government servants
Recipients	27

GALLANTRY AWARDS

The following gallantry and defence distinguished service awards were announced during the period 27 January 1987 to 26 January 1988:

GALLANTRY AWARDS

Param Vir Chakra	2 (1 Posthumous)
Maha Vir Chakra	9 (4 Posthumous)
Kirti Chakra	10 (5 Posthumous)
Vir Chakra	37 (15 Posthumous)
Shaurya Chakra	34 (5 Posthumous)

DEFENCE DISTINGUISHED SERVICE DECORATIONS

Param Vishist Seva Medal	13
Uttam Yudh Seva Medal	5
Ati Vishist Seva Medal	48
Yudh Seva Medal	9
Vishist Seva Medal	107
Bar to Vishist Seva Medal	4
Sena Medal	97 (16 Posthumous)

Bar to Sena Medal	1
Nao Sena Medal	16
Bar to Nao Sena Medal	2
Vayu Sena Medal	15
Mention-in-Despatches	9

LALIT KALA AKADEMI AWARDS 1987 AND 1988

Tej Singh	Painting	*Love Phase-III*
R P Nigam	Painting	*Expression-B*
Umesh Kumar Saxena	Painting	*Painting-III*
R Umesh	Painting	*Composition-II*
Yusuf	Drawing	*Weaves-II*
Sukhvinder Singh	Graphic	*Windows-II*
Pinaki Barua	Graphic	*Apartheid*
J K Chillar	Sculpture	*Towards Temple*
S M Shahid	Sculpture	*Nasoor-III*
P N Choyal	Painting	*View-I*
K Damodaran	Painting	*Surface-R*
A Alphonso	Painting	*Dimension-I and II*
Surinder K Bhardwaj	Painting	*City 1986*
Achuthan Kudallur	Painting	*Blue-I*
Th Tombi Singh	Painting	*Woman at Market*
Shyam Sharma	Graphic	*Earth and Space-A*
Rini Dhumal	Graphic	*The Landscape Beyond*
KM Gopal	Sculpture	*Ardha Ganeshwari-I*
Mukul Panwar	Sculpture	*Growth*

SANGEET NATAK AKADEMI AWARDS 1987 AND 1988

MUSIC

CR Vyas	*Vocal*
Pandit Jasraj	*Vocal*
Smt Shobha Gurtu	*Vocal*
Abdul Halim Jaffer Khan	*Sitar*
Imrat Hussain Khan	*Sitar/Surbahar*
Madurai N Krishnan	*Vocal*
Smt Mani Krishnaswami	*Vocal*
T Vishwanathan	*Flute*
TK Murthy	*Mridangam*
Ram Marathe	*Natya Sangeet*
Smt Chhabi Bandopadhyay	*Kirtan*
Smt Banni Bai	*Harikathakalakshepam*
Bhupen Hazarika	*Folk Music-Assam*
Ali Mohammad Sheikh	*Folk Music-Jammu and Kashmir*

DANCE

US Krishna Rao and Smt Chandrabhaga Devi	*Bharatanatyam*
Smt Chitra Visweswaran	*Bharatanatyam*
Km Uma Sharma	*Kathak*
Kalamandalam Gopi	*Kathakali*

Tarun Kumar Singh	*Manipuri*
Pasumarthi Venugopala Krishna Sarma	*Kuchipudi*
Smt Sonal Mansingh	*Odissi*
Madan Mohan Lenka	*Chhau-Mayurbhanj*

THEATRE

VV Shirwadkar	*Playwriting-Marathi*
Gopal Chhotray	*Playwriting-Oriya*
Tarun Roy	*Direction*
Smt Sulabha Deshpande	*Acting*
Suresh Dutta	*Puppetry*
Pukhraj	*Folk Theatre-Rajasthan*
Ratan Thiyam	*Direction*

1988

FELLOWSHIP MUSIC

Kumar Gandharva	*Music*

MUSIC

Smt Padmavati Gokhale 'Shaligram'	*Hindustani Vocal Music*
Smt Zarin Daroowala	*Hindustani Instrumental Music-Sarod*
Hanuman Mishra	*Hindustani Instrumental Music-Sarang*
Pagal Das	*Hindustani Instrumental Music-Pakhawaj*
Nookala China Satyanarayana	*Carnatic Vocal Music*
R Pichumani Iyer	*Carnatic Instrumental Music-Veena*
Chalakudi NS Narayanaswami	*Carnatic Instrumental Music-Violin*
TH Vinayak Ram	*Carnatic Instrumental Music-Ghatam*
Vallyapatti AR Subrahmanian	*Carnatic Instrumental Music-Thavil*
Bhaskar Chandavarkar	*Creative Music*
Chhota Gandharva	*Natya Sangeet*
Jhaduram Devangan	*Pandavani*
Smt Pratima Barua	*Folk Music of Assam*
Kanji Bhoota Barot	*Folk Music of Gujarat*
Lalchand Yamla Jatt	*Folk Music of Punjab*
Smt Allah Jilai Bai	*Folk Music of Rajasthan*
Salil Chowdhury	*Music (Media)*

DANCE

Keezhpatom Kumaran Nair	*Kathakali*
G Ibopishak Sharma	*Manipuri*
Guru Shrihari Nayak	*Chhau-Mayurbhanj*

THEATRE

Dharamvir Bharati	*Playwriting-Hindi*
Smt Sarita Joshi	*Acting-Gujarati*
DG Godse	*Scenic Design*
Smt Y Gambhini Devi	*Manipuri Nata-Sankirtana*

Government of India

(As on December 8, 1989)

President	Shri R Venkataraman
Vice President	Dr Shankar Dayal Sharma
Prime Minister	Shri Vishwanath Pratap Singh Holds charge of the Ministries/Departments of Defence; Personnel, Public Grievances and Pension; Science and Technology; Atomic Energy; Electronics; Ocean Development; Space; Environment and Forests and other subjects not allocated to any Cabinet Minister or Minister of State (Independent Charge)

CABINET MINISTERS

Shri Devi Lal	Deputy Prime Minister and Minister of Agriculture
Prof Madhu Dandavate	Minister of Finance
Shri George Fernandes	Minister of Railways
Shri Ajit Singh	Minister of Industry
Shri Sharad Yadav	Minister of Textiles with additional charge of Ministry of Food Processing Industries
Shri Mufti Mohammad Sayeed	Minister of Home Affairs
Shri Arun Kumar Nehru	Minister of Commerce & Tourism
Shri Arif Mohd Khan	Minister of Energy with additional charge of the Ministry of Civil Aviation
Shri Ram Vilas Paswan	Minister of Labour and Welfare
Shri Nilamani Routray	Minister of Health & Family Welfare
Shri IK Gujral	Minister of External Affairs
Shri MS Gurupadaswamy	Minister of Petroleum & Chemicals

Shri P Upendra	Minister of Information & Broadcasting and Parliamentary Affairs
Shri KP Unnikrishnan	Minister of Surface Transport with additional charge of Ministry of Communications
Shri Dinesh Goswami	Minister of Steel & Mines with additional charge of the Ministry of Law & Justice
Shri Murasoli Maran	Minister of Urban Development

MINISTERS OF STATE

Shri Manobhai Kotadiya	Minister of State (Independent charge) of the Ministry of Water Resources
Smt Maneka Gandhi	Minister of State in the Ministry of Environment & Forests

SAHITYA AKADEMI AWARDS 1987 AND 1988

Author	Work	Language
Harakrishna Deka	*Aan Ejan* (Poetry)	Assamese
Arun Mitra	*Khujte Khujte Eto Dur* (Poetry)	Bengali
Prakash Premi	*Beddan Dharti Di* (Epic)	Dogri
Shiv K Kumar	*Trapfalls in the Sky* (Poetry)	English
Sitanshu Yashaschandra	*Jatayu* (Poetry)	Gujarati
Shrikant Verma (Late)	*Magadh* (Poetry)	Hindi
K P Purnachandra Tejasvi	*Chidambara Rahasya* (Novel)	Kannada
Mir Ghulam Rasool Nazki	*Awaz-i-Dost* (Quatrains)	Kashmiri
Arvind Mambro	*Panaji Atam Mhatari Zalea* (Short Stories)	Konkani
Umanath Jha	*Atita* (Short Stories)	Maithili
N Krishna Pillai	*Prathipathram Bhashanubhedam* (Literary Criticism)	Malayalam
E Nilakanta Singh	*Tirtha Yatra* (Poetry)	Manipuri
R C Dhara	*Shri Vithal: Ek Mahasamanavaya* (Research Studies)	Marathi
Lil Bahadur Chettri	*Brahmaputraka Chhau-Chhau* (Novel)	Nepali
Nityananda Mahapatra	*Gharadiha* (Novel)	Oriya
Ram Sarup Anakhi	*Kothe Kharak Singh* (Novel)	Punjabi
Nain Mal Jain	*Saglonri Peeda Swatmegh* (Poetry)	Rajasthani
Biswanarayan Shastri	*Avinasi* (Novel)	Sanskrit
Harish Vaswani	*Chalih Chorasi* (Essays)	Sindhi
Aadhavan Sundaran (Late)	*Mudalil Iravu Varum* (Short stories)	Tamil
Arudra	*Gurazada Gurupeethan* (Essays)	Telugu
Shahryar	*Khawab Ka Dar Band Hai* (Collection of verses)	Urdu
Lakshmi Nandan Bora	*Patal Bhairabi* (Novel)	Assamese
Ramapada Chaudhuri	*Bari Badle Jay* (Short Novel)	Bengali
Ram Lal Sharma	*Ratoo Da Chanan* (Ghazals)	Dogri
Vikram Seth	*The Golden Gate* (Novel in verse)	English
Bhagwatikumar Sharma	*Asooryalok* (Novel)	Gujarati
Naresh Mehta	*Aranya* (Poetry)	Hindi
Shankar Mokashi Punekar	*Avadheshwari* (Novel)	Kannada
Ghulam Nabi Gauhar	*Pun Te Paap* (Novel)	Kashmiri
Chandrakant Keni	*Vhonkol Pavnni* (Short Stories)	Konkani
Mayanand Mishra	*Mantraputra* (Novel)	Maithili
C Radhakrishnan	*Spandamapinikale Nandi* (Novel)	Malayalam
Sonamani Singh	*Mamangthong Lollabadi Maningthongda Lakaudana* (Short Stories)	Manipuri
Laxman Gaikwad	*Uchalya* (Autobiographical Novel)	Marathi
Puspalal Upadhyaya	*Usha Manjari* (Poetry)	Nepali
Sourindra Barik	*Akasa Pari Nibida* (Poetry)	Oriya
SS Wanjara Bedi	*Galiey Chikar Duri Ghar* (Autobiography)	Punjabi

Author	Work	Language
Bhagwati Lal Vyas	*Anahad Naad* (Poetry)	Rajasthani
Rajendra Mishra	*Ikshugandha* (Short Stories)	Sanskrit
Moti Prakash	*Se Sabh Sandhyam Saah Sen* (Travelogue)	Sindhi
VC Kulandaiswamy	*Vazhum Valluvam* (Lectures)	Tamil
Rachamallu Ramachandra Reddy (Late)	*Anuvada Samasyalu* (Language)	Telugu
Sheikh Mohammad Abdulla (Late)	*Atish-e-Chinar* (Autobiography)	Urdu

LAWS ENACTED BY PARLIAMENT IN 1987 AND 1988

1 The Appropriation (Vote on Account) Act, 1987 (Act No. 1 of 1987).
2. The Appropriation Act, 1987 (Act No. 2 of 1987).
3. The Appropriation (No. 2) Act, 1987 (Act No. 3 of 1987).
4. The Cotton, Copra and Vegetable Oils Cess (Abolition) Act, 1987 (Act No. 4 of 1987).
5. The Appropriation (Railways) Act, 1987 (Act No. 5 of 1987).
6. The Appropriation (Railways) (No. 2) Act, 1987 (Act No. 6 of 1987).
7. The Appropriation (Railways) (No. 3) Act, 1987 (Act No. 7 of 1987).
8. The Delhi Municipal Corporation (Amendment) Act, 1987 (Act No. 8 of 1987).
9. The Appropriation (No. 3) Act, 1987 (Act No. 9 of 1987).
10. The Jute Packaging Materials (Compulsory Use in Packing Commodities) Act, 1987 (Act No. 10 of 1987).
11. The Finance Act, 1987 (Act No. 11 of 1987).
12. The Khadi and Village Industries Commission (Amendment) Act, 1987 (Act No. 12 of 1987).
13. The Merchant Shipping (Amendment) Act, 1987 (Act No. 13 of 1987).
14. The Mental Health Act, 1987 (Act No. 14 of 1987).
15. The Labour Welfare Funds Laws (Amendment) Act, 1987 (Act No. 15 of 1987).
16. The Goa, Daman and Diu Mining Concessions (Abolition and Declaration as Mining Leases) Act, 1987 (Act No. 16 of 1987).
17. The Governors (Emoluments, Allowances and Privileges) Amendment Act, 1987 (Act No. 17 of 1987).
18. The Goa, Daman and Diu Reorganisation Act, 1987 (Act No. 18 of 1987).
19 The State of Arunachal Pradesh (Amendment) Act, 1987 (Act No. 19 of 1987).
20. The Factories (Amendment) Act, 1987 (Act No. 20 of 1987).
21. The Coconut Development Board (Amendment) Act, 1987 (Act No. 21 of 1987).
22. The Payment of Gratuity (Amendment) Act, 1987 (Act No. 22 of 1987).
23 The Conservation of Foreign Exchange and Prevention of Smuggling Activities (Amendment) Act, 1987 (Act No. 23 of 1987).
24. The Punjab State Legislature (Delegation of Powers) Act, 1987 (Act No. 24 of 1987).
25. The Essential Commodities (Special Provisions) Continuance Act, 1987 (Act No. 25 of 1987).
26. The Cine-Workers Welfare Fund (Amendment) Act, 1987 (Act No. 26 of 1987).
27. The National Security (Amendment) Act, 1987 (Act No. 27 of 1987).
28. The Terrorist and Disruptive Activities (Prevention) Act, 1987 (Act No. 28 of 1987).
29. The Atomic Energy (Amendment) Act, 1987 (Act No. 29 of 1987).
30. The All India Institute of Medical Sciences and the Post-Graduate Institute of Medical Education and Research, Chandigarh (Amendment) Act, 1987 (Act No. 30 of 1987).
31. The Representation of the People (Amendment) Act, 1987 (Act No. 31 of 1987).
32. The Punjab Appropriation Act, 1987 (Act No. 32 of 1987).

33. The Appropriation (No. 4) Act, 1987 (Act No. 33 of 1987).
34. The Navy (Amendment) Act, 1987 (Act No 34 of 1987).
35. The Expenditure Tax Act, 1987 (Act No. 35 of 1987).
36 The Brentford Electric (India) Limited (Acquisition and Transfer of Undertakings) Act, 1987 (Act No 36 of 1987).
37. The National Dairy Development Board Act, 1987 (Act No. 37 of 1987).
38. The Representation of the People (Second Amendment) Act, 1987 (Act No. 38 of 1987).
39. The Legal Services Authorities Act, 1987 (Act No. 39 of 1987).
40. The Representation of the People (Third Amendment) Act, 1987 (Act No 40 of 1987).
41. The Shipping Development Fund Committee (Abolition) Act, 1987 (Act No. 41 of 1987).
42. The Metro Railways (Construction of Works) Act, 1987 (Act No 42 of 1987).
43 The Constitution (Scheduled Tribe) Order (Amendment) Act, 1987 (Act No 43 of 1987).
44. The Auroville (Emergency Provisions) Amendment Act, 1987 (Act No 44 of 1987).
45. The Appropriation (No. 5) Act, 1987 (Act No 45 of 1987).
46. The Finance (Amendment) Act, 1987 (Act No. 46 of 1987).
47 The Air (Prevention and Control of Pollution) Amendment Act, 1987 (Act No. 47 of 1987)
48. The High Court Judges (Conditions of Service) Amendment Act, 1987 (Act No 48 of 1987).
49. The Equal Remuneration (Amendment) Act, 1987 (Act No. 49 of 1987)
50. The Comptroller and Auditor-General (Duties, Powers and Conditions of Service) Amendment Act, 1987 (Act No. 50 of 1987).
51. The Administrative Tribunals (Amendment) Act, 1987 (Act No. 51 of 1987).
52. The All India Council for Technical Education Act, 1987 (Act No 52 of 1987).
53. The National Housing Bank Act, 1987 (Act No. 53 of 1987).
54. The Railway Claims Tribunal Act, 1987 (Act No 54 of 1987).
55. The Regional Rural Banks (Amendment) Act, 1987 (Act No. 1 of 1988)
56. The Chandigarh (Delegation of Powers) Act, 1987 (Act No. 2 of 1988).
57 The Commission of Sati (Prevention) Act, 1987 (Act No. 3 of 1988).
58. The Direct Tax Laws (Amendment) Act, 1987 (Act No. 4 of 1988).
59. The Parsi Marriage and Divorce (Amendment) Act, 1988 (Act No. 5 of 1988).
60. The Appropriation (Vote on Account) Act, 1988 (Act No. 6 of 1988).
61. The Appropriation Act, 1988 (Act No. 7 of 1988).
62. The Punjab Appropriation (Vote on Account) Act, 1988 (Act No. 8 of 1988).
63. The Punjab Appropriation Act, 1988 (Act No. 9 of 1988).
64. The Delhi Administration (Amendment) Act, 1988 (Act No. 10 of 1988).
65. The Delhi Municipal Corporation (Amendment) Act, 1988 (Act No. 11 of 1988).
66 The Major Port Trusts (Amendment) Act, 1988 (Act No. 12 of 1988).
67. The Tamil Nadu Appropriation (Vote on Account) Act, 1988 (Act No. 13 of 1988).
68. The Tamil Nadu Appropriation Act, 1988 (Act No. 14 of 1988)
69. The Appropriation (Railways) Act, 1988 (Act No. 15 of 1988)
70. The Appropriation (Railways) (No. 2) Act, 1988 (Act No 16 of 1988).
71. The Appropriation (Railways) (No. 3) Act, 1988 (Act No. 17 of 1988).
72. The Authorised Translations (Central Laws) Amendment Act, 1988 (Act No. 18 of 1988).
73. The Repealing and Amending Act, 1988 (Act No. 19 of 1988).
74. The High Court and Supreme Court Judges (Conditions of Service) Amendment Act, 1988 (Act No. 20 of 1988).
75. The Tamil Nadu State Legislature (Delegation of Powers) Act, 1988 (Act No. 21 of 1988).
76. The Tamil Nadu Agricultural Service Cooperative Societies (Appointment of Special Officers) Amendment Act, 1988 (Act No. 22 of 1988).
77. The Tamil Nadu Cooperative Societies (Appointment of Special Officers) Amendment Act, 1988 (Act No. 23 of 1988).
78. The Illegal Migrants (Determination by Tribunals) Amendment Act, 1988 (Act No. 24 of 1988).
79. The Appropriation (No. 2) Act, 1988 (Act No. 25 of 1988).

80. The Finance Act, 1988 (Act No. 26 of 1988).
81. The Customs (Amendment) Act, 1988 (Act No. 27 of 1988).
82. The Appropriation (No. 3) Act, 1988 (Act No. 28 of 1988).
83. The Customs and Central Excise Laws (Amendment) Act, 1988 (Act No. 29 of 1988).
84. The Rajghat Samadhi (Amendment) Act, 1988 (Act No. 30 of 1988).
85. The Companies (Amendment) Act, 1988 (Act No. 31 of 1988)
86. The Code of Criminal Procedure (Amendment) Act, 1988 (Act No. 32 of 1988).
87. The Employees Provident Funds and Miscellaneous Provisions (Amendment) Act, 1988 (Act No. 33 of 1988).
88. The Special Protection Group Act, 1988 (Act No. 34 of 1988).
89. The Cine-Workers and Cinema Theatre Workers (Regulation of Employment) Amendment Act, 1988 (Act No. 35 of 1988).
90. The Food Corporation (Amendment) Act, 1988 (Act No. 36 of 1988).
91. The Punjab Appropriation (No. 2) Act, 1988 (Act No. 37 of 1988).
92. The Alcock Ashdown Company Limited (Acquisition of Undertakings) Amendment Act, 1988 (Act No. 38 of 1988).
93. The Tamil Nadu Appropriation (No. 2) Act, 1988 (Act No. 39 of 1988).
94. The National Waterway (Sadiya—Dhubri Stretch of the Brahmaputra River) Act, 1988 (Act No. 40 of 1988).
95. The Religious Institutions (Prevention of Misuse) Act, 1988 (Act No. 41 of 1988).
96. The Arms (Amendment) Act, 1988 (Act No. 42 of 1988).
97. The National Security (Amendment) Act, 1988 (Act No. 43 of 1988).
98. The Bharat Petroleum Corporation Limited (Determination of Conditions of Service of Employees) Act, 1988 (Act No. 44 of 1988).
99. The *Benami* Transactions (Prohibition) Act, 1988 (Act No. 45 of 1988).
100. The Prevention of Illicit Traffic in Narcotic Drugs and Psychotropic Substances Act, 1988 (Act No. 46 of 1988).
101. The Appropriation (Railways) (No. 4) Act, 1988 (Act No. 47 of 1988).
102. The Appropriation (No. 4) Act, 1988 (Act No. 48 of 1988).
103. The Prevention of Corruption Act, 1988 (Act No. 49 of 1988).
104. The Aircraft (Amendment) Act, 1988 (Act No. 50 of 1988).
105. The Labour Laws (Exemption from Furnishing Returns and Maintaining Registers by certain Establishments) Act, 1988 (Act No. 51 of 1988).
106. The State of Arunachal Pradesh (Amendment) Act, 1988 (Act No. 52 of 1988).
107. The Water (Prevention and Control of Pollution) Amendment Act, 1988 (Act No. 53 of 1988).
108. The Auroville Foundation Act, 1988 (Act No. 54 of 1988).
109. The Merchant Shipping (Amendment) Act, 1988 (Act No. 55 of 1988).
110. The Dock Workers (Regulation of Employment) Amendment Act, 1988 (Act No. 56 of 1988).
111. The Delhi Rent Control (Amendment) Act, 1988 (Act No. 57 of 1988).
112. The Jamia Millia Islamia Act, 1988 (Act No. 58 of 1988).
113. The Motor Vehicles Act, 1988 (Act No. 59 of 1988).
114. The Salary, Allowances and Pension of Members of Parliament (Amendment) Act, 1988 (Act No. 60 of 1988).
115. The Maternity Benefit (Amendment) Act, 1988 (Act No. 61 of 1988).
116. The Monopolies and Restrictive Trade Practices (Amendment) Act, 1988 (Act No. 62 of 1988).
117. The Commissions of Inquiry (Amendment) Act, 1988 (Act No. 63 of 1988).
118. The Tamil Nadu Appropriation (No. 3) Act, 1988 (Act No. 64 of 1988).
119. The Punjab Appropriation (No. 3) Act, 1988 (Act No. 65 of 1988).
120. The Banking, Public Financial Institutions and Negotiable Instruments Laws (Amendment) Act, 1988 (Act No. 66 of 1988).
121. The Sixth Schedule to the Constitution (Amendment) Act, 1988 (Act No. 47 of 1988).
122. The National Highways Authority of India Act, 1988 (Act No. 68 of 1988).

123. The Forest (Conservation) Amendment Act, 1988 (Act No. 69 of 1988).
124. The Appropriation (No. 5) Act, 1988 (Act No. 70 of 1988).
125. The Representation of the People (Amendment) Act, 1988 (Act No. 1 of 1989).[1]
126. The Narcotic Drugs and Psychotropic Substances (Amendment) Act, 1988 (Act No 2 of 1989).[1]

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[1] Became an Act in 1989.

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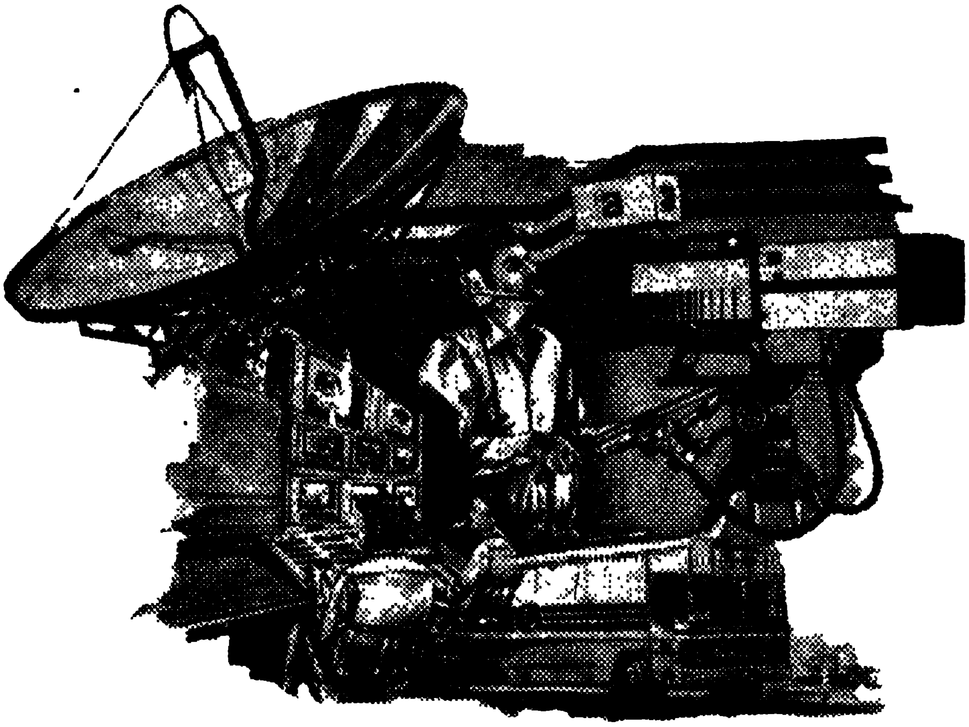

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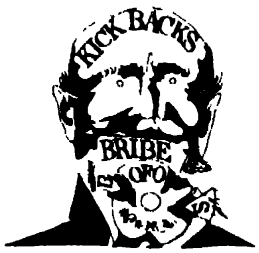

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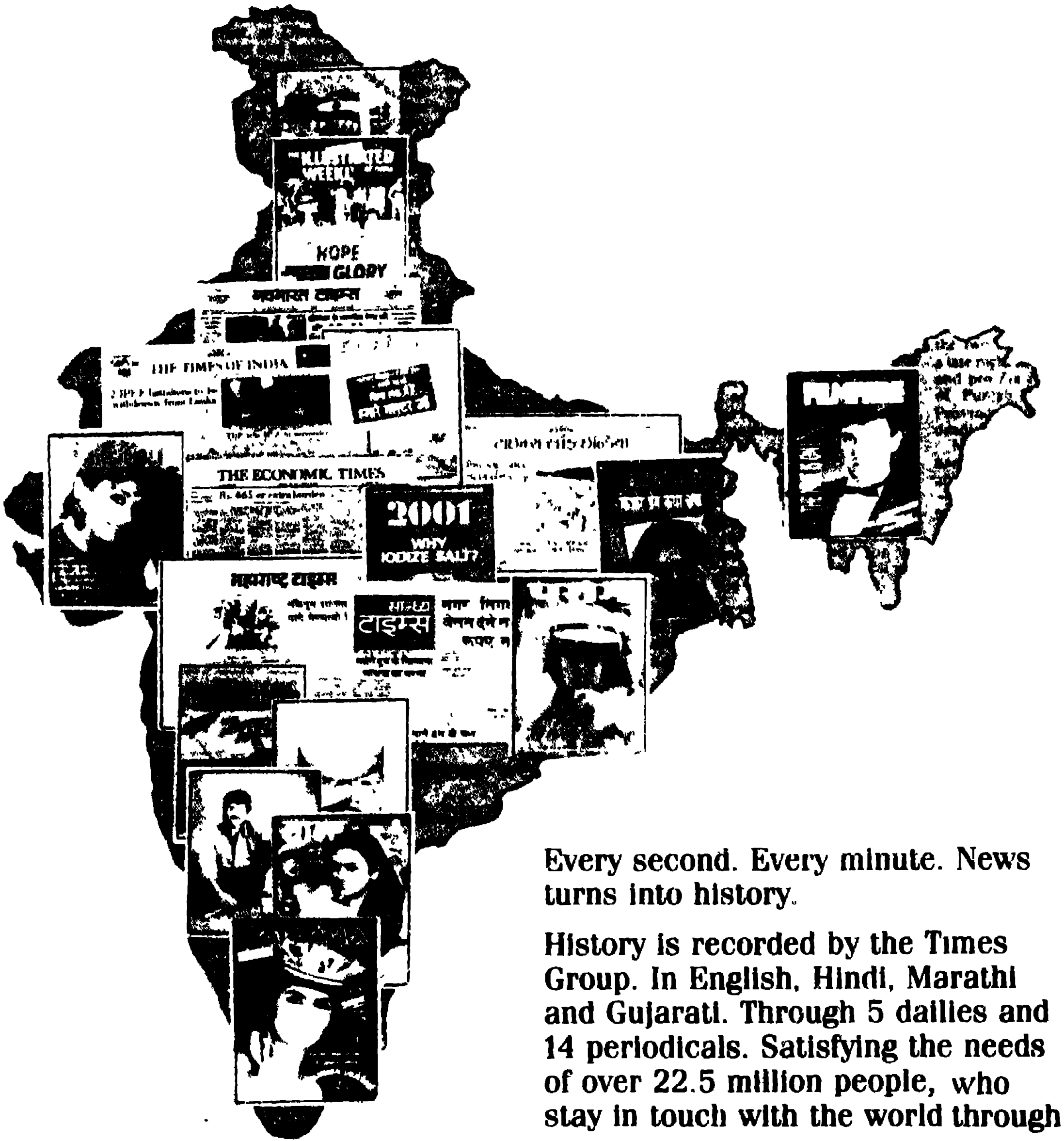

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Big scale help to the small scale industry

Assistance to [illegible] units, artisans and crafts [illegible] have been given priority in receiving assistance [illegible] progress. Financial assistance has gone up [illegible] crores in 1984 to Rs. [illegible] crores in 1988.

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Equal opportunities for women

Banks [illegible] encouraging more and more women in their entrepreneurial efforts. Banks [illegible] national programme of training and employment for women by [illegible] credit to their self employment ventures.

Homes for the roofless

[illegible] schemes, financial assistance has been provided to various sections [illegible] poor for the construction of houses.

Assistance to students

[illegible] provided to students for higher studies. Vocational guidance is also provided [illegible] the younger generation to face the future with confidence.

'Roads' to progress

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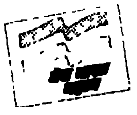

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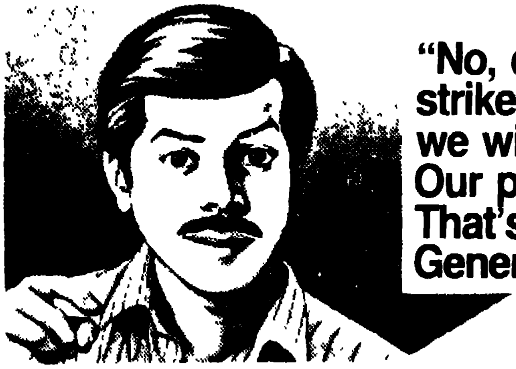

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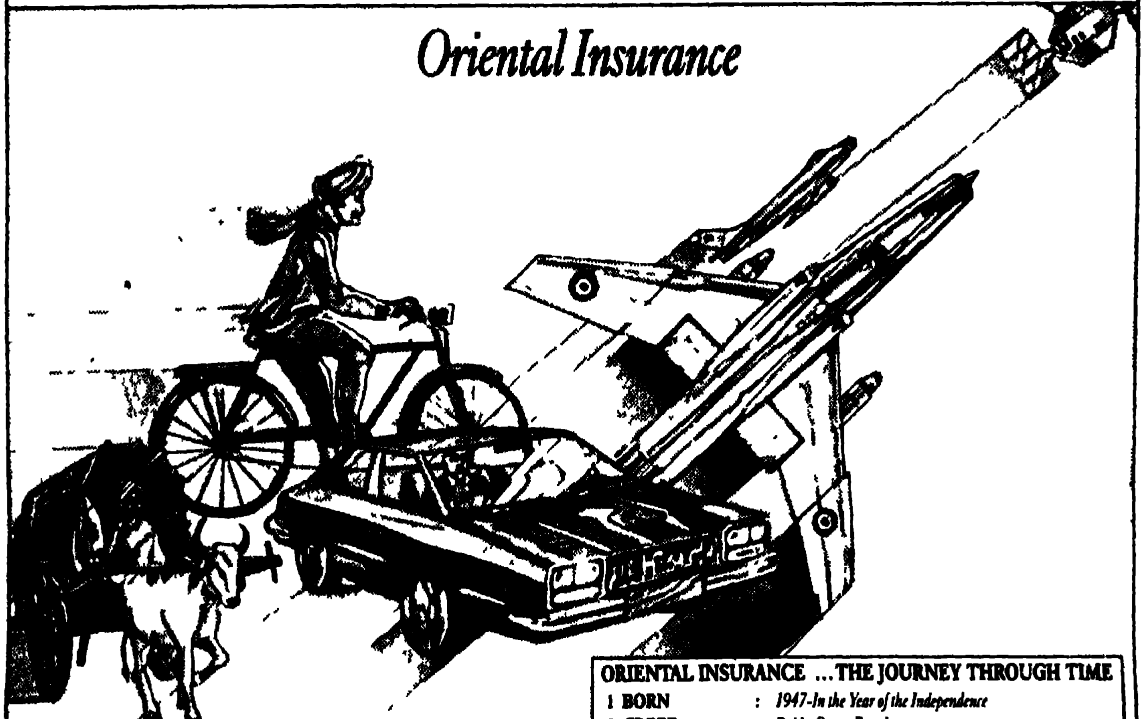

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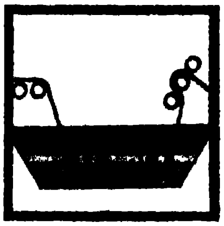

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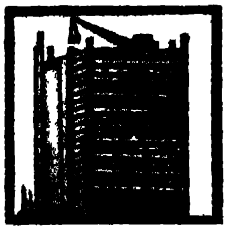

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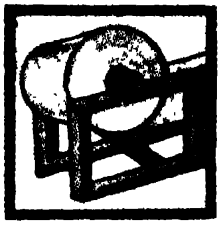

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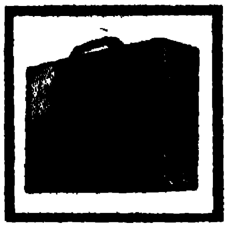

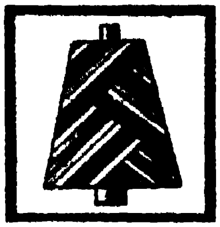

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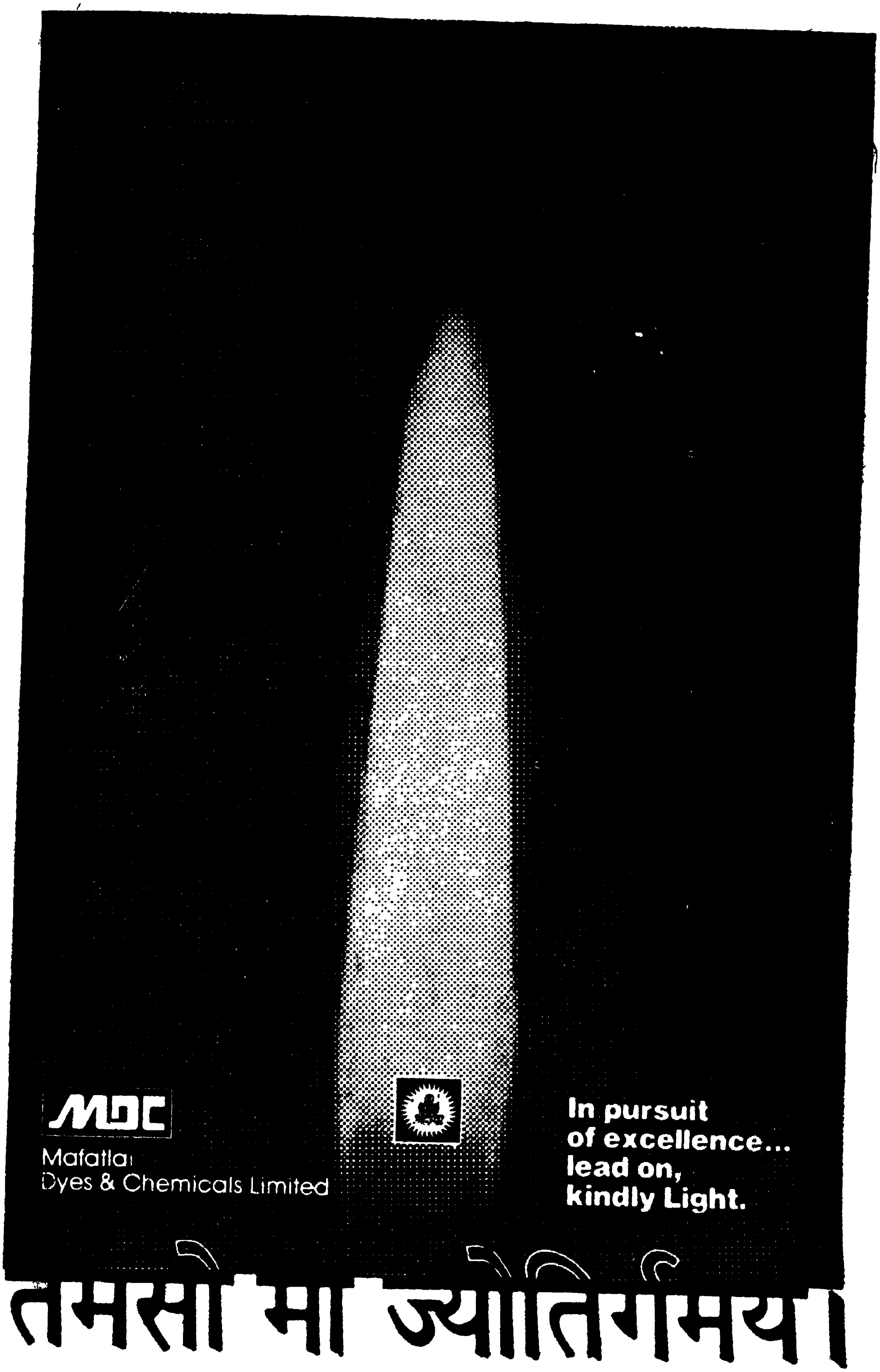
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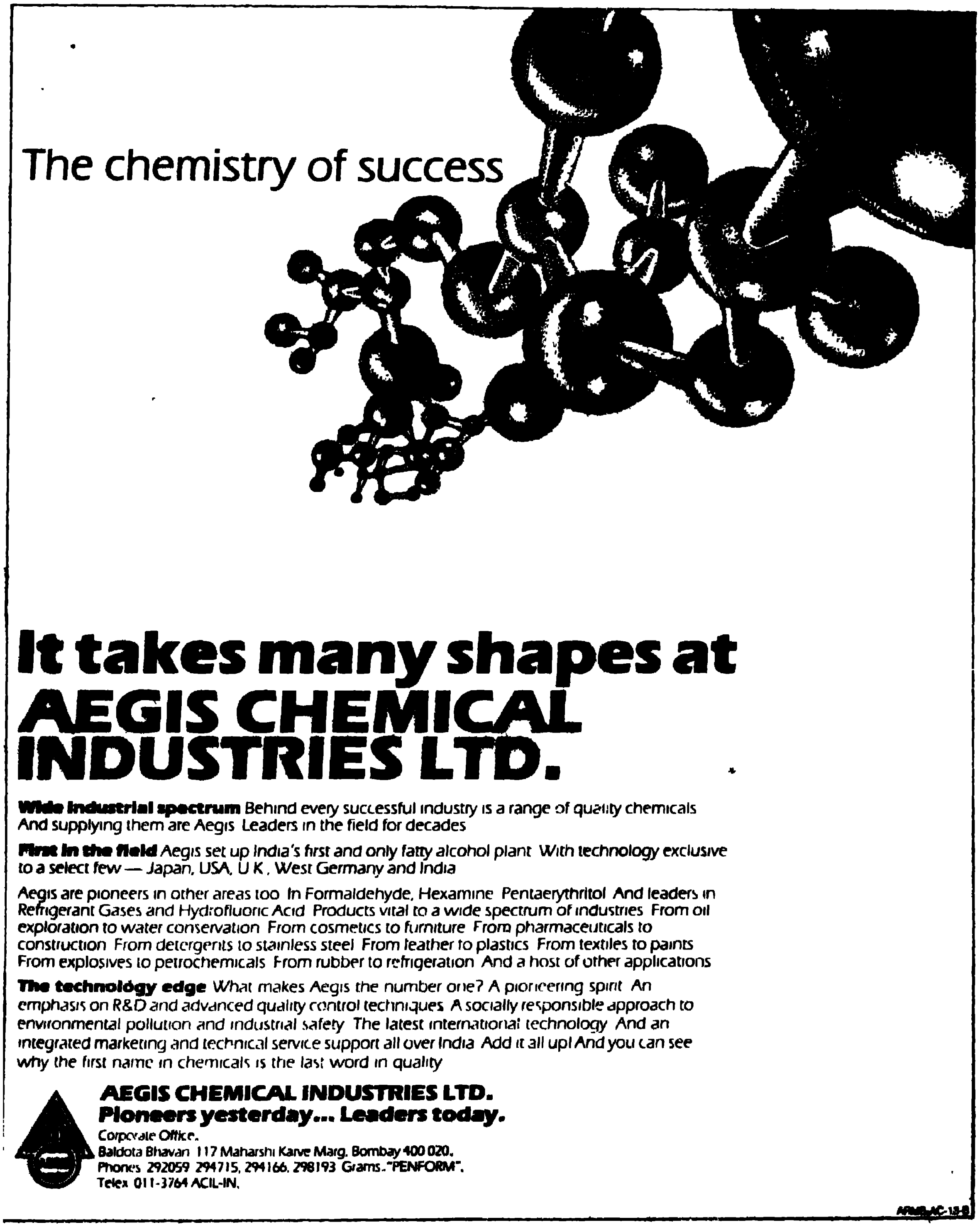

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The technology edge What makes Aegis the number one? A pioneering spirit An emphasis on R&D and advanced quality control techniques A socially responsible approach to environmental pollution and industrial safety The latest international technology And an integrated marketing and technical service support all over India Add it all up! And you can see why the first name in chemicals is the last word in quality

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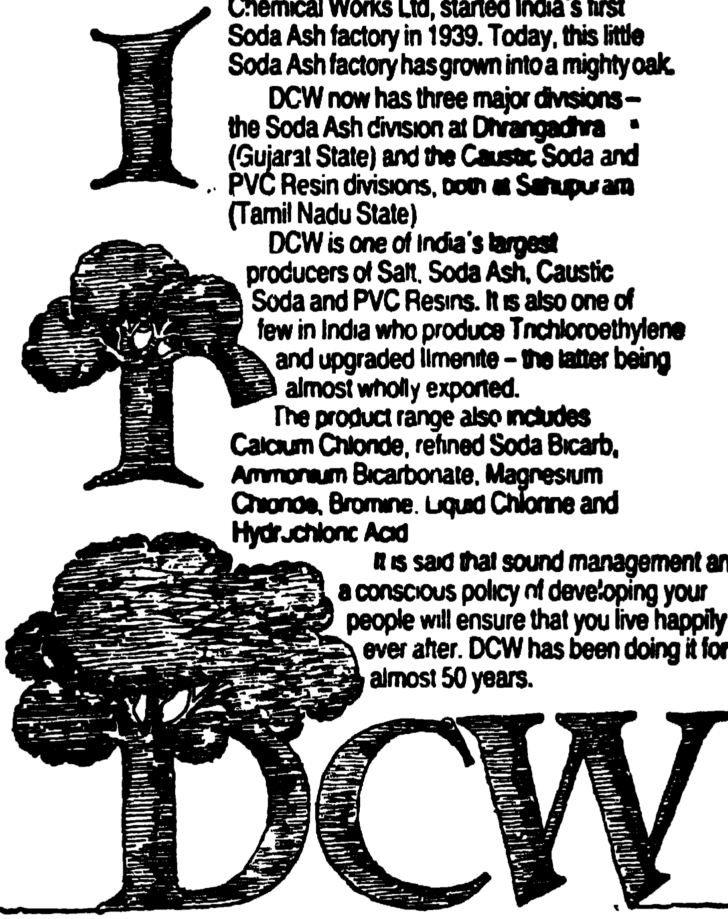

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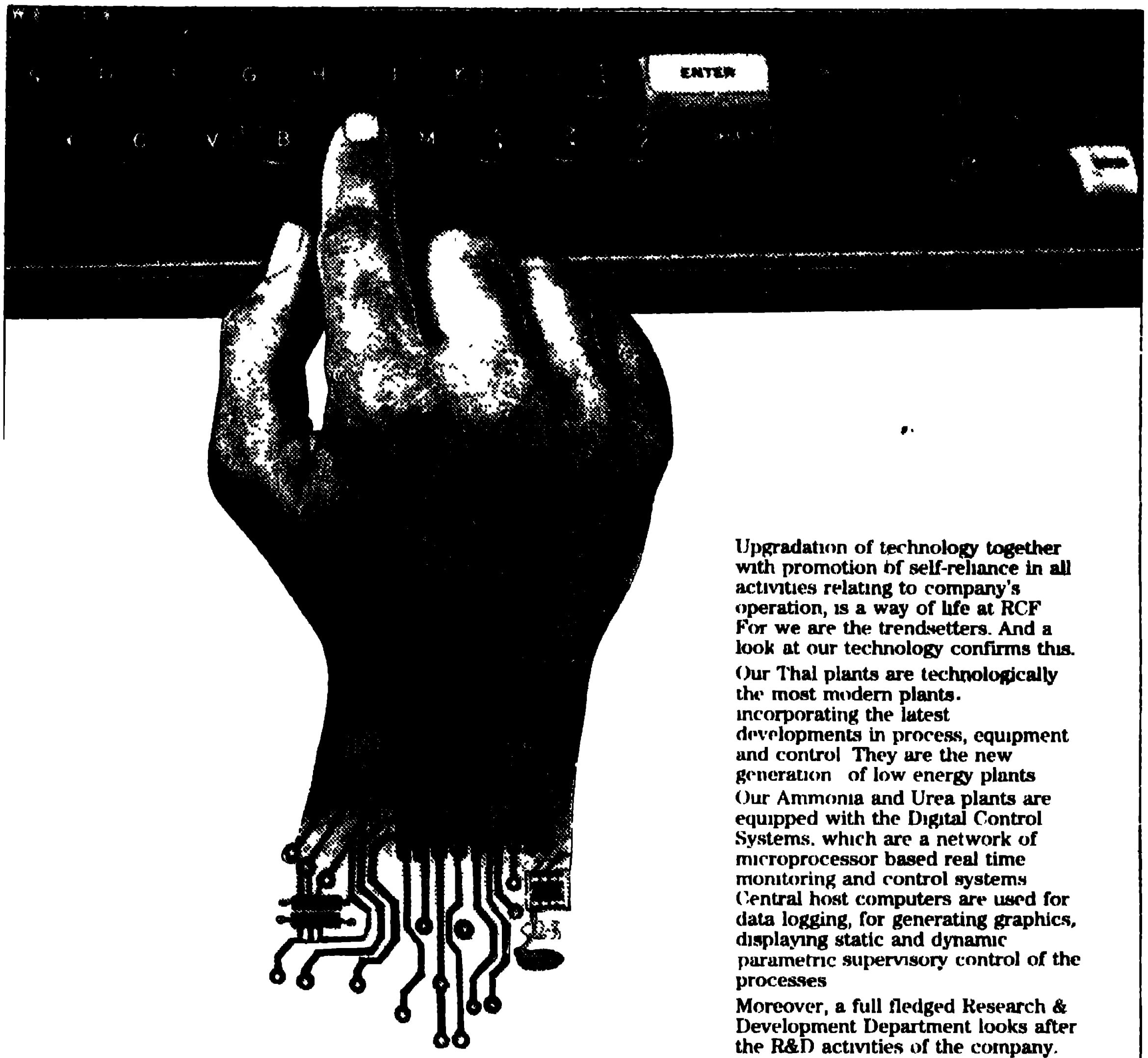

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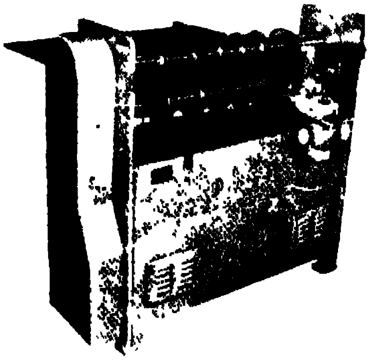
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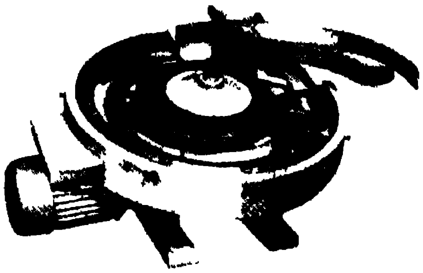
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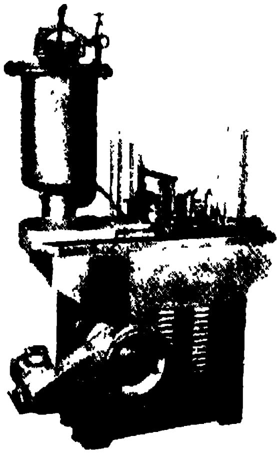
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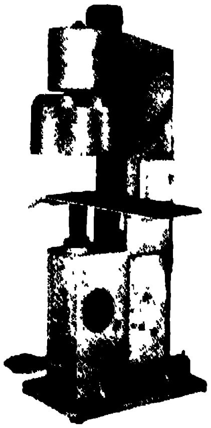
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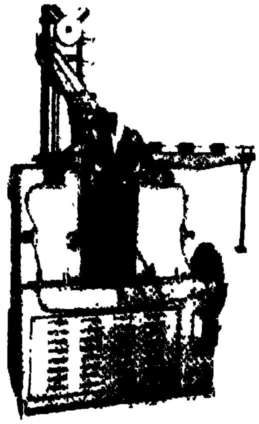
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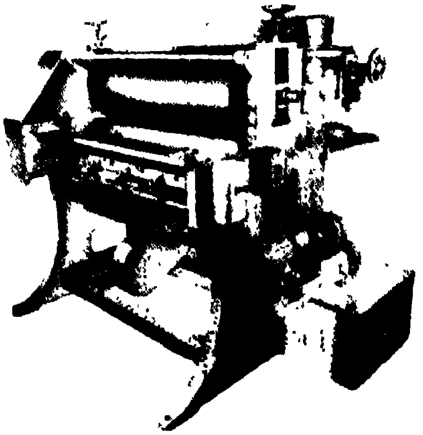
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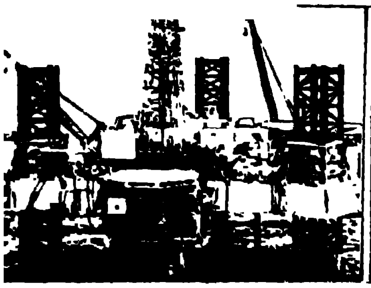

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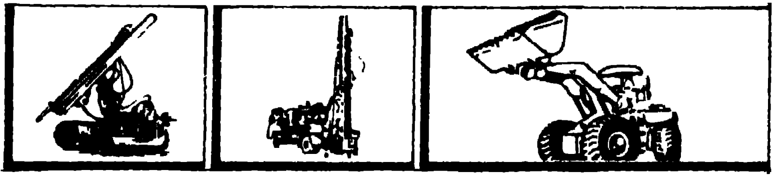

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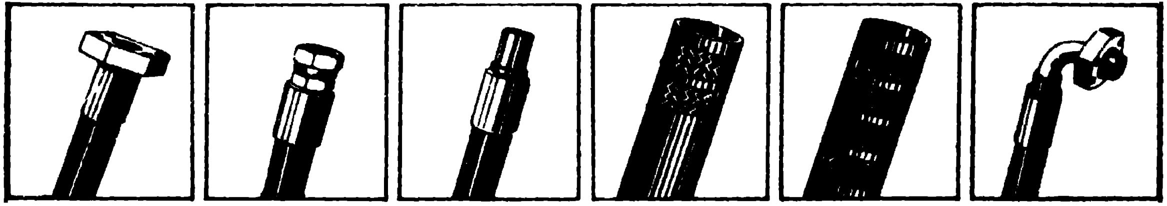

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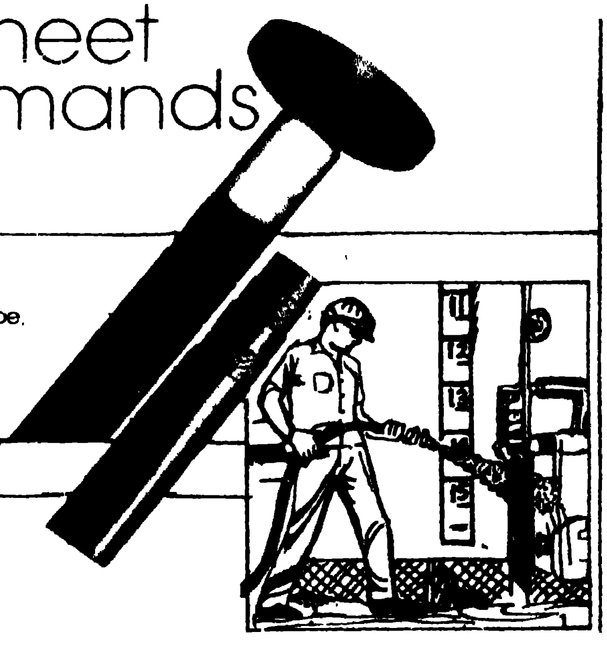

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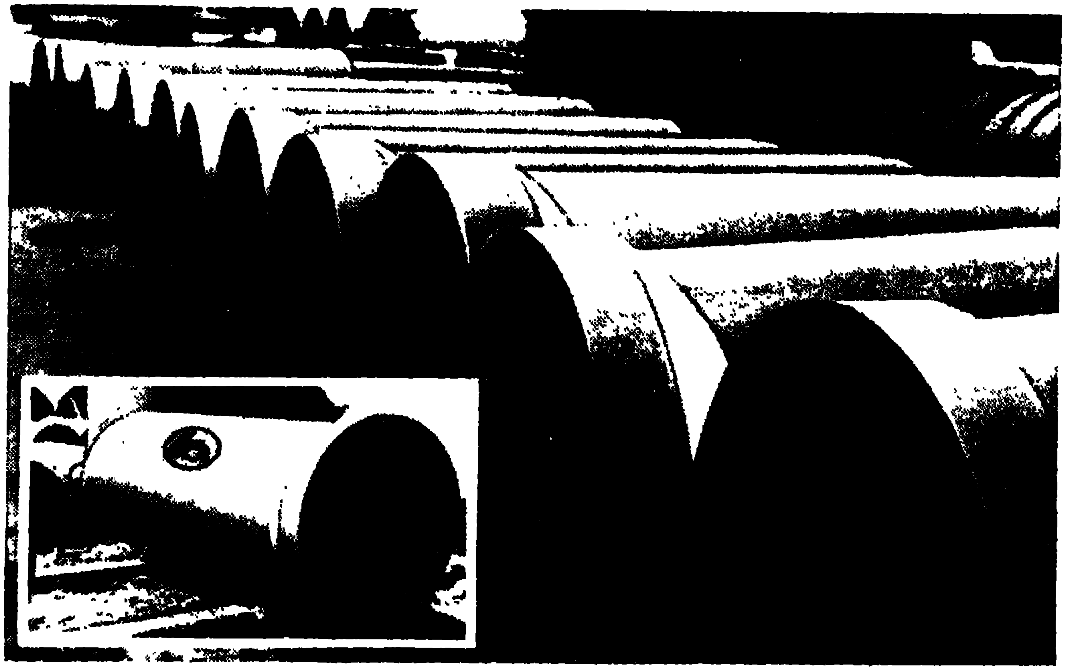

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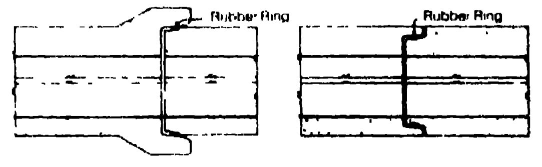

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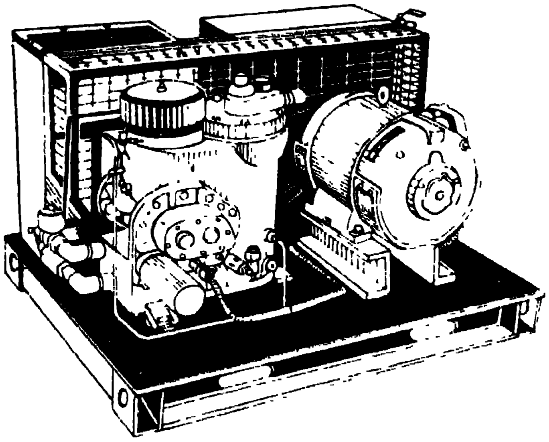

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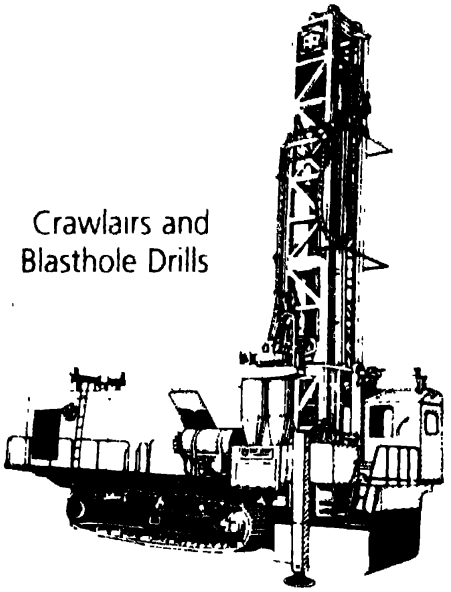

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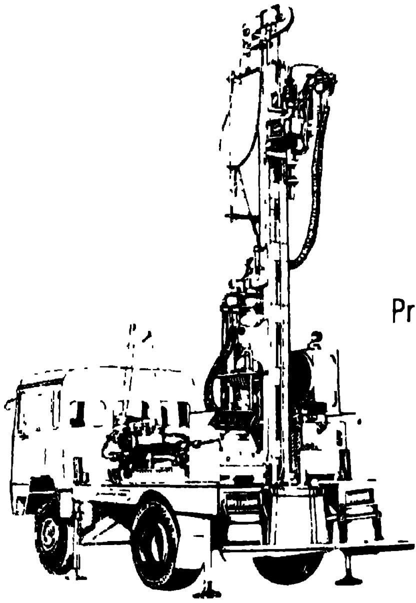

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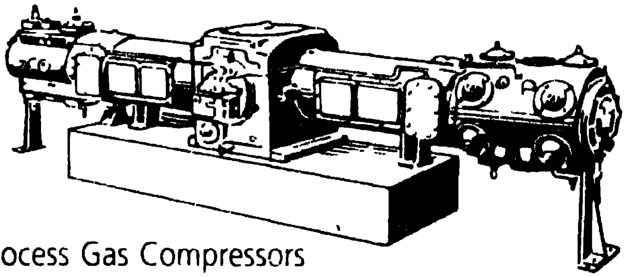

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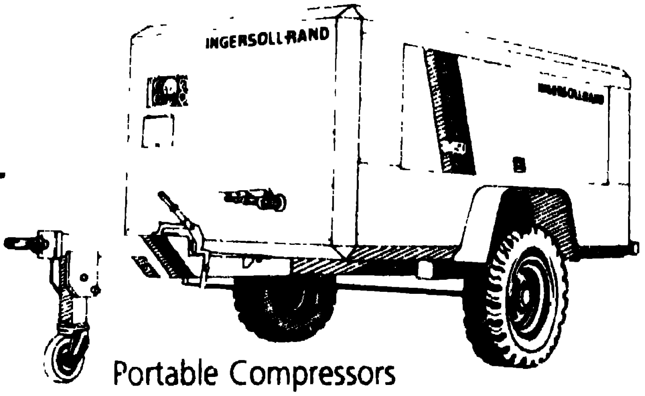

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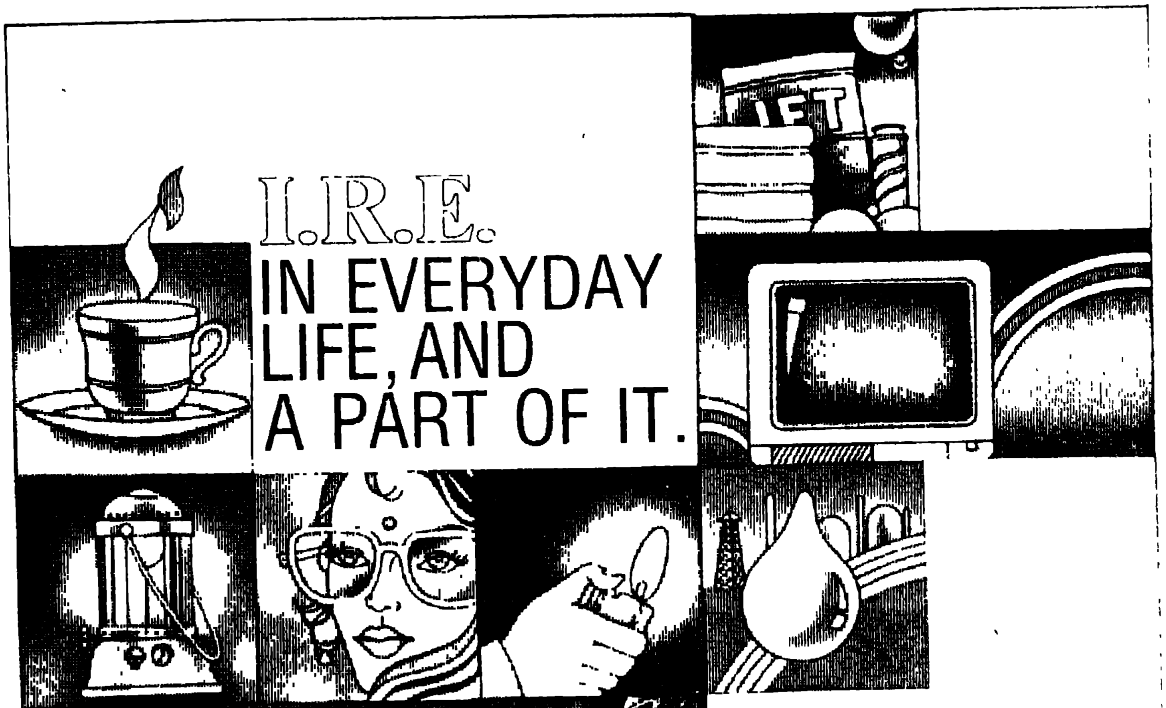

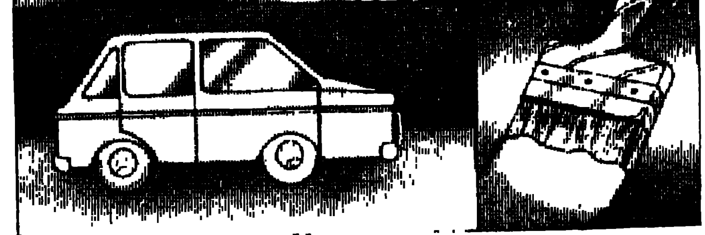

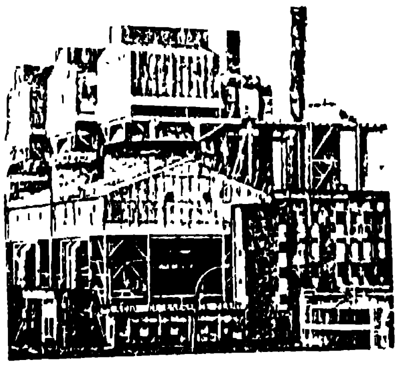

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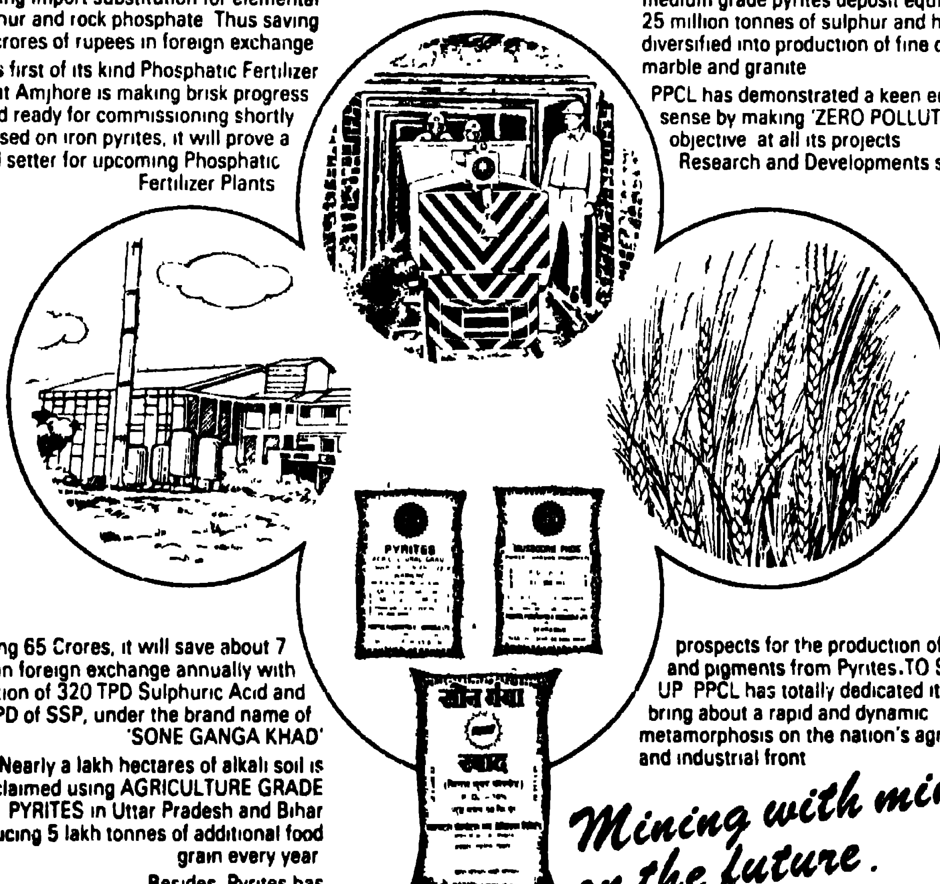
India's first of its kind Phosphatic Fertilizer Plant at Amjhore is making brisk progress and ready for commissioning shortly. Based on iron pyrites, it will prove a trend setter for upcoming Phosphatic Fertilizer Plants.



Costing 65 Crores, it will save about 7 crores in foreign exchange annually with production of 320 TPD Sulphuric Acid and 800 TPD of SSP, under the brand name of 'SONE GANGA KHAD'.

Nearly a lakh hectares of alkali soil is reclaimed using AGRICULTURE GRADE PYRITES in Uttar Pradesh and Bihar producing 5 lakh tonnes of additional food grain every year.

Besides, Pyrites has proved as an effective sulphur fertilizer. "MUSSOORIE PHOS", a unique phosphatic fertilizer, is extensively used in the country and as an import substitute has saved Rs. 6 crores in foreign exchange during 1987-88. Saladipura project has 120 million tonnes of medium grade pyrites deposit equivalent to 25 million tonnes of sulphur and has diversified into production of fine quality marble and granite.

PPCL has demonstrated a keen ecological sense by making 'ZERO POLLUTION' its objective at all its projects. Research and Developments show good prospects for the production of magnets and pigments from Pyrites. TO SUM IT UP PPCL has totally dedicated itself to bring about a rapid and dynamic metamorphosis on the nation's agricultural and industrial front.

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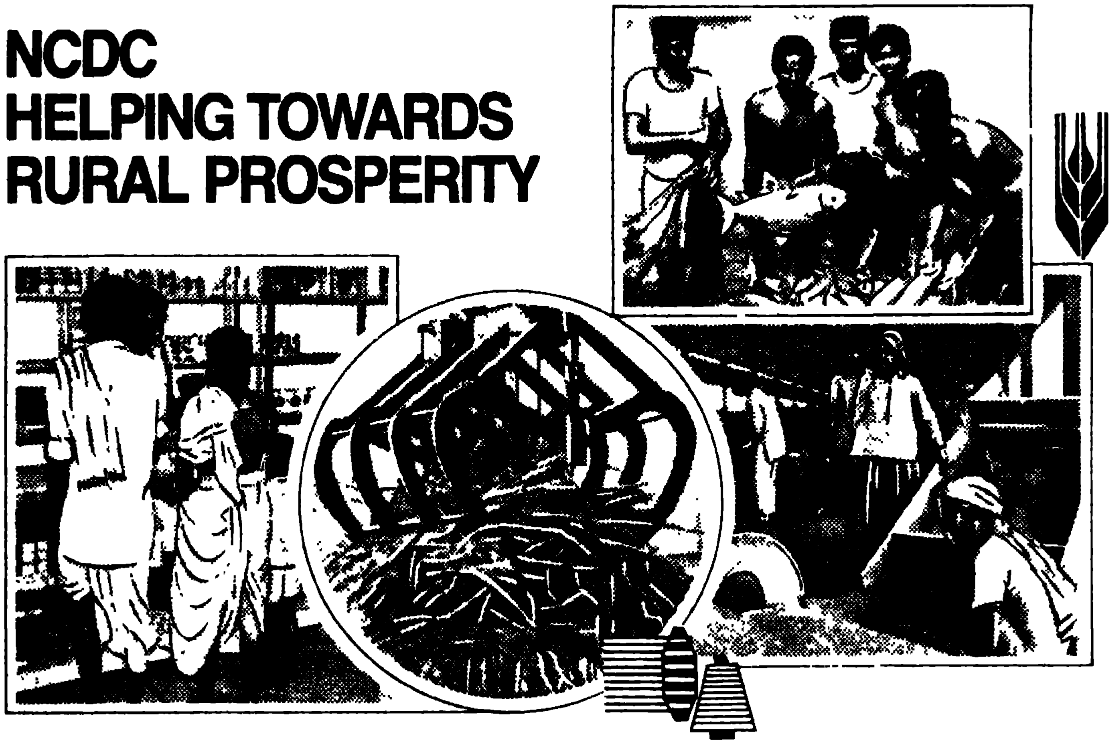

NCDC plans, promotes and finances through cooperatives, production, processing, storage and marketing of agricultural produce, production and distribution of fertilisers and other inputs, distribution of essential commodities in rural areas and development of weaker sections and cooperatively less developed areas

Cooperatives now market agricultural produce valued at over Rs. 4000 crores. Farmers receive a remunerative return for their produce and also obtain production inputs and consumer requirements at fair prices from cooperatives.

To strengthen cooperative infrastructure at the villages, already over 100 lakh tonnes of capacity for storage of agricultural produce, inputs and consumer goods has been created through NCDC's assistance of over Rs. 350 crores

NCDC is paying special attention to the development of oilseeds through initiating integrated projects with latest technology in major oilseeds growing states of the country. Cooperatives have created 13 lakh tonnes of oilseed processing capacity. NCDC has contributed Rs 230 crores for their development.

Cooperative sugar and spinning mills have a consistently high level of capacity utilisation and are an important segment of industrial production Cooperative sugar factories now produce nearly 60 per cent of national output of sugar. NCDC is actively involved in their promotion and development.

For tribal and other weaker sections such as fishermen, handloom weavers, small and marginal farmers, the Corporation operates special schemes with softer terms of financing The emphasis is on integrated projects which link production with marketing and processing.

Since inception in 1963, NCDC has invested over Rs. 1200 crores in the cooperative sector. In 1986-87, it disbursed Rs. 148.52 crores.

In its 25 years of service, NCDC has seen with pride the cooperatives making their presence felt in the rural economy.

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KRIBHCO's story has been a saga of success And an outstanding example of what solidarity of purpose can achieve

Because KRIBHCO is the story of a dedicated team effort. Made by thousands of cooperatives from the length and breadth of the country Institutions which are proud to be members of the world's largest cooperative

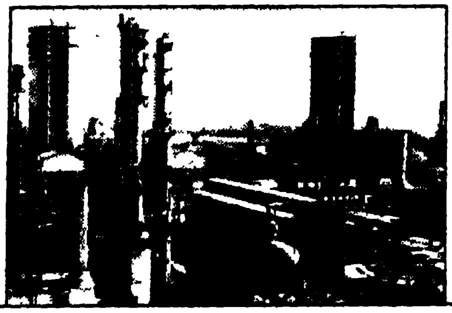
KRIBHCO is much more than the producer of top-grade urea The Hazira project, with its world record in capacity utilisation, is a major success But there are many other achievements that go to form KRIBHCO's success story

There are activities aimed at improving the socio- economic standard of the farmers, like block demonstrations, mini-kit distribution, crop seminars, social forestry, wasteland development, expanding rural services and strengthening the cooperative set up

Also, due attention is paid to health, hygiene, welfare, sports and cultural aspects of the rural people's life

The future is not overlooked either Annual management conferences, workshops, and meetings help the Society to define its perspective plan and bring about improvements The Society is always geared to maximise production, take on new projects for DAP and phosphatic fertilisers, and other projects to help farmers through the cooperative system Constant improvements are brought out in current programmes and policies So that KRIBHCO stays ahead, as always

As more and more cooperatives join the fold, KRIBHCO continues to grow And with it will grow the Indian farmers



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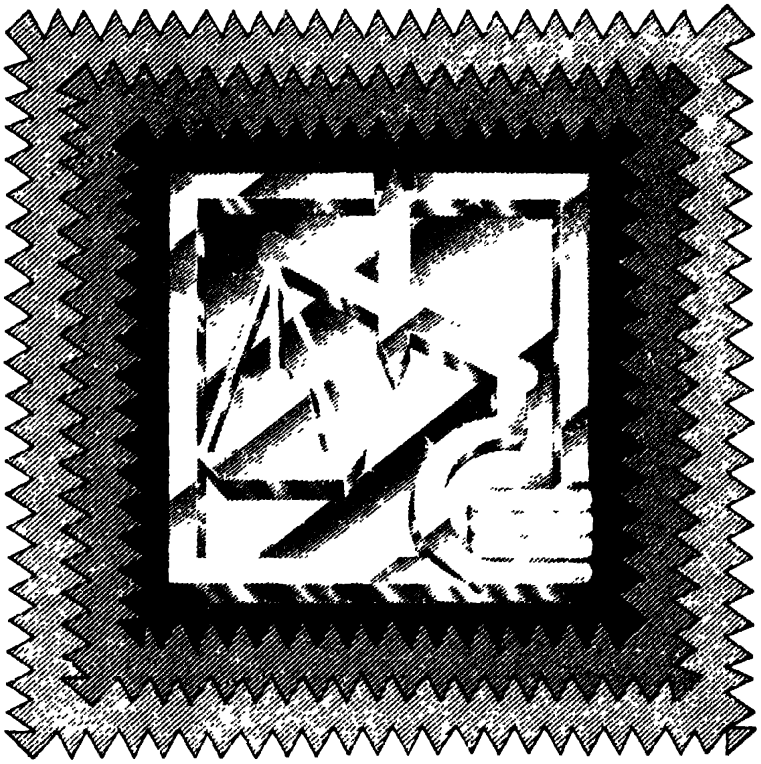

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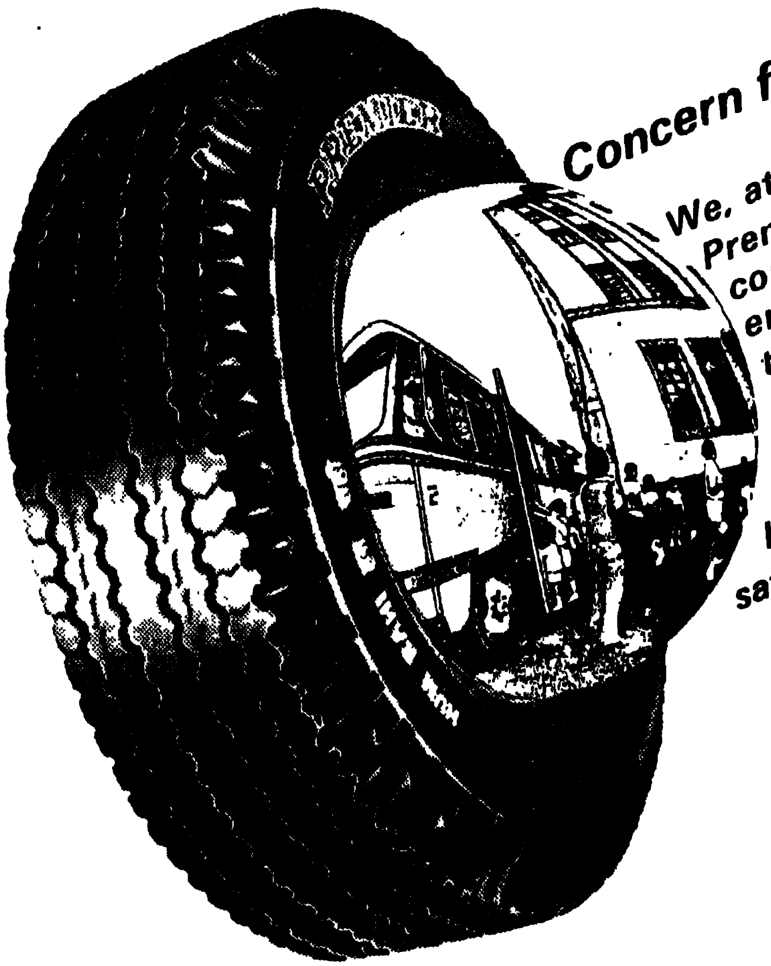

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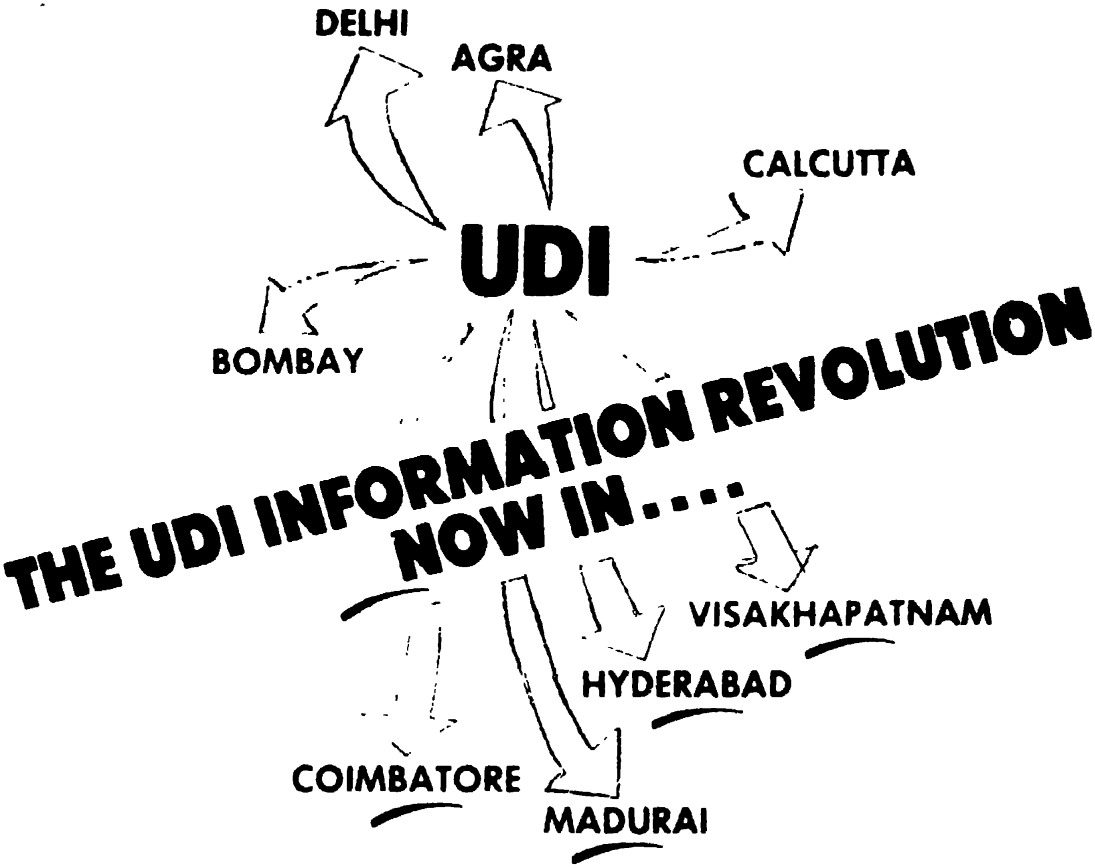

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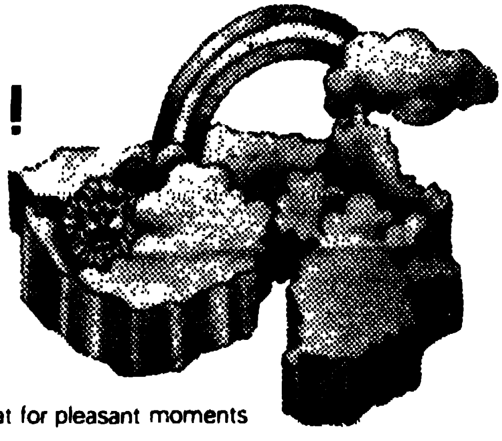

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